

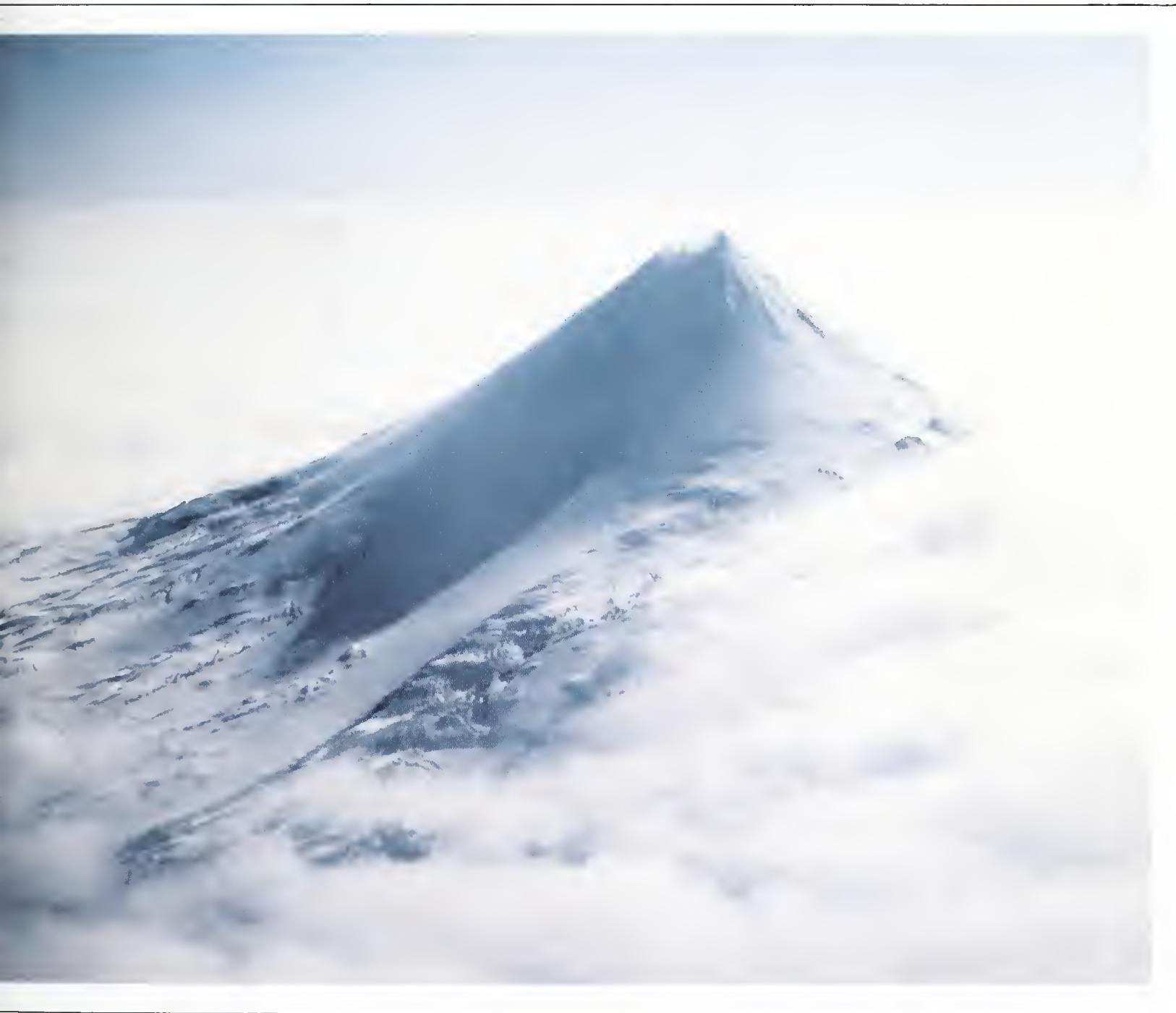


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ALASKA MEDICINE



VOLUME 17, NUMBER 1

JANUARY 1975

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ASPECTS OF VIOLENCE REDUCTION

Joseph D. Bloom, M.D.

In the course of the forensic psychiatric evaluation of three men accused of severe acts of violence many issues emerged which have bearing on violence prevention. The object of this report is to describe these cases and make several suggestions for possible steps toward greater cooperation between the mental health fields and legal-judicial-correctional systems, and hopefully toward more coordinated steps in violence reduction. The three cases, two murders and a serious assault, were evaluated at the Langdon Psychiatric Clinic on court order from the Superior Court of the State of Alaska. In each case the impressive fact to me was that the violent events occurred after long prodromal periods, periods of time where carefully thought out interventions *might* have influenced the deadly outcomes. This paper will focus mainly on these prodromal periods and not on the details of the actual violent events.

Case I. In August of 1971 W., a 21-year-old man escaped from the Adult Correctional Camp in Palmer. He hitched a ride along the Glenn Highway going east and was picked up by a middle aged man and an 11-year-old boy who were out on a rock hunting expedition. When they reached the Sheep Mountain area the man drove down a side road along Jackass Creek. They parked and it was along this road that B. killed first the man and then the boy by smashing them with rocks. Following this he took their car and left.

B. had been arrested in June of 1971 in Valdez, on charges of joyriding and possession of hallucinogenic and depressant drugs. He was sentenced to a total of six months and was

transferred to the Adult Camp in Palmer several weeks prior to his elopement. In the material provided by the court for review there were transcripts of several interviews that were held with inmates of the Adult Camp regarding B. One person stated: "For the period of time I worked with him at the Camp, approximately three weeks, he was very unpredictable." Another inmate who was his bunk mate stated: "I had the bed next to B. in a dormitory cubicle. No one wanted to get too close to him as he was very dangerous. He was always thinking about destroying things and trying to scare people. All the other inmates thought he would break out and kill somebody in the barracks at any time." Another person who worked with B. in the kitchen at the camp said: "B. was assigned to the kitchen under me. He was a dishwasher. He was not stable and seemed to get irritated at the least little thing. B. was only under me for a few days when he left. I had talked to him a couple of times. He had no close friends. B. mentioned that he might go to Canada when he got out as he had lived there before." B. left the Adult Camp for very strange reasons. In his interview with the investigating police officer the following was recorded: "Q. — Why did you leave camp? A. — Because of the prejudices. I was in a bind. I did not want to get involved."

He explained this further to me by explaining that he had been assigned to work in the kitchen and soon the head cook began to trust him. He says that the head cook gave him the keys to the yeast cabinet because he "couldn't trust the Indians and Eskimos," who were interested in obtaining yeast so that they could make "pruno," a form of alcoholic beverage. B. felt that being put in charge of the yeast cabinet was too much pressure for him; that he had come to Alaska to get away from "prejudice" and here he was put right in the

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middle of it again. He talked about prejudice as being the cause of his father's death. His father had been shot to death on the streets of Oakland, California in a robbery when B. was age 19. The night before he left camp he had been told that he was going to be made a head cook. While watching TV that night the "Indians and Eskimos were calling me white man." He said that he stayed awake most of the night, that he was "worried and paranoid." He got up at 6:30 a.m., went for breakfast, looked around outside and saw the mountains, and the clouds, and he left camp. He made his way to the road where he was picked up by his victims.

The following is a summary of B.'s early life. All the information was available from various California institutions and from B. B. was born the only son to middle class parents from Oakland, California. His father was 19 years older than his mother, was 44 when B. was born, and the relationship between father and son was not close. When B. was 14 after a brief separation between B.'s parents he began to "mess around," skipping school and from age 16 on spent most of his time in correctional institutions. He was originally committed to the California Youth Authority in December, 1966, "at which time he had already had an 18-month history of extreme social maladjustment which included joyriding, numerous traffic violations, auto theft, incorrigibility, stealing from his parents, runaway from home, extensive and excessive use of LSD and marijuana and escape from juvenile hall."

According to the records his first psychiatric admission occurred in November, 1966 when he ingested "about three-fourths of a can of foot powder." He had been at the Juvenile Hall when he made the suicide gesture and after a short hospitalization he was sent to the Youth Training School where he remained for nine months. He was then paroled to his parents in October, 1967 but was returned to Juvenile Hall in January, 1968 because of his "extensive use of LSD." His next psychiatric hospitalization occurred eight days later when the following events happened:

"On January 16, 1968 an emergency consultation on B. was requested, as he had moments before, assaulted a teacher without provocation, and when restrained, managed to break the restraints and cut his wrists with a sharp piece of a broken light globe. B. is a well-nourished, healthy appearing boy of 18 with a young appearing face. He was agitated, confused and mildly incoherent. He grimaced, strained against the restraints and initially requested assistance in committing suicide. There was a wild look in his eyes and he gave a

rambling account of his decision to kill himself . . . Using 'hippie' argot, B. talked about his feeling that his body was turning to 'garbage' and he must free his 'soul' from his impure body . . . His explanation of the previous assaultive episode was that he decided 'today was the day to go all the way.' Knowing that he was too 'cowardly' to kill himself, he thereupon struck the teacher hoping to kill him so that he would in turn be killed himself by others."

He was transferred to the psychiatric unit of a county hospital and remained there for two days and sent back to the Juvenile Hall. Five days later he was found hanging in his room at the Juvenile Hall. At the time he was found he was cyanotic and had no respirations. While in the county hospital he was again seen by a psychiatrist who stated he could find no significant evidence of depression, repeated the previous diagnosis of character disorder. He was transferred back to Juvenile Hall six days later on January 31, 1968.

In March of 1968 a report was written by the staff of the Juvenile Hall which states the following: "Currently, B. is showing psychotic tendencies but it is impossible to say with certainty whether or not this is due to residual drug toxicity. However, on a deeper level, staff is inclined to think that this youth is indeed undergoing a psychotic process which is further confused by his extensive use of drugs. At present the facts are that this youth continues to be suicidal, is extremely dangerous to the welfare of others and has to be considered homicidal. It seems likely that his recent suicide attempt further complicates the diagnostic picture." It was suggested that B. be transferred to a state mental hospital. On June 6, 1968 he was transferred to the Atascadero State Mental Hospital for observation and treatment. He remained there until November 14, 1968 when he was transferred back to the Juvenile Hall. Apparently he remained in custody of the CYA until June of 1969 when his father was murdered. He was released at that time to "help his mother." In October of 1969 on a voluntary application B. was admitted to the Agnew State Mental Hospital. Excerpts from the admission note are as follows: "The patient stated that he went to work and earned good money and was able to take care of his mother until his mother got enough insurance money and then they went their separate ways. This occurred on the 16th of October, 1969. Since the 16th, he has been on LSD, Mescaline and other hallucinogens. He stated that he became disenchanted because money was the symbol for society and this is what caused his father's death and he was making too much money and he couldn't stand

it." He was discharged from the hospital on November 4, 1969 with plans "to move to San Jose and seek new friends."

Following his release from the Agnew State Hospital, he began drifting around the country. His course can be plotted by listing his arrest record, from Florida, to Oregon, to Alaska. He came to Alaska in February, 1971 due to "curiosity," and was arrested in Valdez in June of 1971.

Case II. In the early hours of the morning of March 11, 1973, C. a 25-year-old man offered a ride to a young man who was drinking in the same bar, and who was looking for a ride home after the bar had closed at 5:00 a.m. After riding around for a while drinking beer, they ended up at Earthquake Park. J. knew that something was "going to happen." Apparently after sitting for a short time J. pulled the young man out of the truck. According to his report, with no provocation he beat the young man to death.

J. was born and grew up in the Midwest. He comes from an upper middle class family. His parents were divorced when he was five primarily due to the fact that his mother was mentally ill and had been hospitalized more or less continuously since his birth. He remembers having problems as a young child. He said that "some of the first people I ever met wanted to hurt me," wanted to "cause me pain and ruin my life." He attributed these feelings to the people in the neighborhood, especially the neighborhood kids who never accepted him as a peer.

At the time of the divorce he went to live with his grandmother and was reunited with his father at age six when his father remarried. He lived with his father and stepmother from age 6-16. In adolescence his problems intensified and he began to have problems with shoplifting and great fears of sexual inadequacy. He lived with his mother and grandmother for one year from age 17-18 when he failed to adjust when his father went to live in Germany for several years. His father returned when he was 18 and J. went back to live with him and finished high school. Following this J. started at a junior college but lasted there for one semester. At that point he started wandering around the country. He left college and went to the Mardi Gras in New Orleans. From there he went to California where he became deeply emersed in the drug culture both using and dealing. He quit that at age 21 and decided to go back to college. He went back to a different school where he lasted again for one semester. He again quit and went to work and at that time he became involved with a young woman who got pregnant but he said he was too fearful to marry her. She had the

baby in September and during that time J. was constantly getting into fights, including several involving knives and heavy drinking. He frequented bars and got into fights to "try people out" and felt a sense of accomplishment if he was able to knock someone down. At age 22 he returned to another college. He apparently went there on and off for two years and again after a poor adjustment moved further west to another school. He stayed there for a short time and then came to Anchorage in September of 1972 again to go to college. He felt that while in Montana people were constantly "hassling" him, that he had no peace or freedom. He said he was extremely nervous and unsure of himself and again seemed to be completely isolated. He said that he was not able to communicate with "one single person" while he was in Montana. He says he came to Alaska mainly to get away from Montana and when he got here he had the same type of experience. He adjusted very poorly in school, had to move frequently because people wouldn't have him stay around for any long period of time.

He says he was "shy, afraid, nervous, paranoid and shook up." He had no friends and felt like he was a tremendous failure. He began to drink heavily and says that he was drunk on and off for several weeks prior to the murder. He was basically making plans to leave Alaska; he had sold his truck and was planning to go home to Michigan. He considered himself to be a failure, felt that his father would no longer support him in any type of school activities and felt that it was the end for him.

During the several months prior to March 11, 1973, he began to drink heavily and began again to get into fights. He again described a sense of freedom, accomplishment, and power with his ability to dominate another human being in a fight. In January of 1973 J. was apprehended after an assault and battery in the parking lot of a local bar. At that time he was sentenced to a week at the Anchorage State Correctional Institution. The incident was described as an unprovoked assault while under the influence of alcohol.

He sums up his own situation as follows: He said: "I sort of knew what I was getting into, I was going crazy ever since I dropped out of college. No one was friendly, each fight I got into got progressively more and more serious. In a period of less than two months I got into over a half dozen fights and the feeling for it grew on me. It was like this; at first I was afraid, I hit a guy once and knocked him on his ass and something happened. I went after him and I wouldn't let him go until he cried. The feeling I got was victory. The next fight I got into was

with a colored guy, I beat him until he was unconscious; then a fight at the bar; I got thrown into jail for drunk and disorderly. The aggravation was worse. After jail I picked up a girl once, was the first female I had any relationships with in eight months and she had VD and I got it. I went to the M.D. for shots. The feeling of desperation got worse after I was infected with VD, seemed to increase the aggravation."

He described that the only relief that he got was when he was drinking. The value of his truck had decreased because of several minor accidents and he only got \$650.00 for it and he didn't have enough money to get back home. At that time he says he also tried to enlist in the military, but he was turned down there also. He was out of money and his landlord was trying to kick him out, "so I got into a few more fights which made me feel good, and then the idea of really hurting someone got with me." He describes how he began to get much satisfaction from "bringing up blood." "It's scary, I can't understand it but at the same time it's better than carrying on the same old rational."

Case III. In December of 1972 in a western rural Alaska town, a 19-year-old Eskimo man had an argument with a middle aged man over whether D. had done damage to the man's house. He deliberately knocked on the door, took several steps back and when the man answered the door D. shot him multiple times. The man did not die and D. was charged with assault with intent to kill.

From all records available, dating back several years, D. has a long history of adjustment difficulties. He was born to Eskimo parents in a small village in southwestern Alaska. He was adopted as an infant by another Eskimo family and at the time was described as malnourished and neglected. He began to get into trouble in his early teens and first came to the attention of the juvenile authorities in 1969. At that time he was admitted to the McLaughlin Youth Center on two charges of breaking and entering. He remained at the Youth Center for ten months and returned home. He was soon arrested for consuming of alcohol and theft.

In November of 1970 he was sent to Anchorage under the auspices of the Office of Vocational Rehabilitation. He lasted in Anchorage for three weeks and was arrested twice for drinking and returned home in December, 1970. In March of 1971 he was again arrested for drinking. At one point while in jail he became violent while drunk and threatened to stab himself. In April of 1971 he was sent back to McLaughlin Youth Center and transferred to a private boys' treatment home near Anchorage.

He stayed there until winter, 1972. He was very bitter about his placement and couldn't wait to leave. In February, 1972 after turning 18 he was released from the home and from the jurisdiction of the court so that he could join the service. His career in the service was again marred by a great deal of adjustment problems. While in the service he went AWOL at least three times and was finally given a general discharge.

He went home in September and was subsequently arrested in October for drinking and disorderly conduct and was sent to Anchorage to the State Correctional Institution from October to December. He again went home, was there less than a week before the shooting. During his week at home prior to the shooting he states that he was again drinking and there is evidence that he was quite upset. On the evening of the shooting his father was told by his uncle that D. was suicidal and had been at his uncle's house and had a knife pointed at his own throat.

He describes the events of that evening as follows: He was apparently drinking with another man at the victim's house early in the evening. D. left the house to go to a dance but was told by the man to return later on. When he came back later in the evening he did not find the man he was drinking with but found the victim, and after an altercation the shooting occurred.

Discussion: Taney (1) has classified homicidal behavior into three types: Ego-syntonic homicide, ego-dystonic (dissociative) homicide, and psychotic homicide. Ego-syntonic homicide is described as a rational goal-directed action, "committed for the purpose of fulfilling a consciously acceptable wish." Ego-dystonic is defined as "resulting from a process occurring between individuals whose personalities and life situation determine the deadly outcome. The homicide in these cases represents a resolution of a conflict extending over a long period of time and maintained primarily on an unconscious level. The killing takes place during a disruption of the ego and may be precipitated by a seemingly insignificant provocation." He sees the psychotic homicide as killings associated with psychotic states and finds these to be rare.

Diagnostically each of the three men described in this paper fall into the psychotic category. Recently I have attempted to describe dissociative homicide among Alaska Eskimos. (2) We certainly also have clear evidence of ego-syntonic killings taking place today in Alaska in the recent "gangland" type murders. Thus, we have various illustrations of Taney's classifications in our current experience.

The violence in each of the cases described

represents the end products of many years of distorted relationships and, suppressed rage. In each case the person described was in deep psychological trouble from early childhood onward. It is possible to see in each case, the gradual spread of the problem from within the nuclear family unit to the community and to see in each case the development and intensification of this situation as adolescence progresses.

Psychosis, and in particular schizophrenia, as a diagnostic category has a natural history and does not spring forth without early stages. In each case the prodromal period was very long and the signs of severe emotional stress were obvious for many different individuals and agencies to witness. One crucial point for this report was that all three men were incarcerated for more or less minor charges within the immediate period prior to the killings. The first man escaped from the Adult Camp, the second man was incarcerated for an assault while intoxicated, three months prior to the murder; and the third man was incarcerated up until one week prior to the assault.

The fact that these men had been incarcerated does not mean that this is a universal finding but it is certainly a finding worth investigating further. Does this happen more often than we realize? Are these men using the Correctional Institutions to manage their feelings of increasing loss of control? It is my contention that much more attention needs to be *routinely* paid to the state of mental health of the routine offender. Screening techniques, diagnostic interviews and record retrieval are essential components of this approach.

The record summary presented in the first case did not come together as it is presented here; time and effort were required to gather the pieces together. Would the work have been worth it prior to the tragedy? New role definitions must be introduced into Correctional Institutions in order that this type of work be accomplished. New roles could be developed from already existing manpower. Further, there needs to be an integration into the system of both moderately and highly trained mental health professionals. It is my contention that the man in the second case would have easily been diagnosed as schizophrenic had he been seen during his first incarceration. The first and third cases would have been more difficult to diagnose but with the records available, the index of severe disturbance would certainly have been greater. Whether these types of measure would have resulted in the prevention of homicide is certainly impossible to say. My own feeling is that the murder in the second case might have been prevented.

The fact that each of the people were incarcerated prior to the murder could easily be used by people inclined to attack both the courts and corrections because of supposed "leniency." I want to make it clear that this is not the point that I am making here. The thrust of my argument does not touch on leniency but more toward modification of functioning and role alteration while the individual is incarcerated. Longer sentences given the same system I do not believe will make any difference in outcomes.

Another argument which comes from the opposite side of popular opinion involves the loss of an individual's civil rights if past records and information about him are a part of the court process and sentencing. In the initial cases had the judges known the extent of each man's past emotional turmoil, psychiatric evaluation would certainly have been ordered. I realize that I have now extended the argument for full evaluation to the legal-judicial phase of the process. Attempts at this type of activity are now being carried out by the Public Defender's Office under a special LEAA grant. Evaluation and extension of this type of project will provide data on whether it has been damaging to the rights of the accused or has on the whole helped in illuminating for all involved some of the psychological issues involved with the accused.

Suicide prevention programs came to the fore in this country within the last ten years. They are based on some simple assumptions in relation to what we know about suicidal behavior, and are based on some basic principles of community mental health. We know that most suicidal people are ambivalent, that they wish to be dead and at the same time wish to be rescued and be helped. We know that the suicidal crisis is a defined period of time when the chance of actual suicide is at its highest. This is true even though the individual may have suicidal feeling over long periods of time.

From community mental health came the idea of the crisis service which is available to people on a 24-hour-a-day basis. Some areas in this state, including Anchorage and Nome, have developed suicide prevention services which provide phone service to those individuals who are feeling suicidal. Extension of such services to your community based emergency services will increase the appeal of such services to more people in psychological crisis. One of the major tools developed by suicide prevention services has been to study its failures. They have termed the complete examination of a suicide a "psychological autopsy." The psychological autopsy attempts to reconstruct in detail the

events leading up to the suicide by putting together all known information and by interviewing relatives and friends where appropriate. Adopting such an approach to study homicide and severe assault would seem a natural route to follow. Applying lessons learned in attempting to reduce suicide is natural to the larger field of violence reduction. It would seem that in the violence prone society in which we live all avenues should be explored to reduce this tragic component of our lives.

This paper leads to several suggestions for further work. It would appear to me to be absolutely essential to begin a detailed study of violence in this state. We crucially need to define the circumstances under which violence seems to break out into the open. We need to know more about the circumstances and the offenders. Research in this area is pitifully and painfully lacking. There is, as far as I can see, no commitment to research in any of the branches of government charged with the areas of criminal justice. In this area I would urge the Governor or the Legislature to set up a violence study group charged with the task of coming up

with recommendations on violence reduction.

Further suggestions from this report must point to a greater integration of the mental health fields with those of judicial, legal and correctional areas. The relationship now is at best very tenuous with much mutual distrust and hostility with only a very few individuals, clearly seeing the overlap of the fields and the areas of mutual responsibility. Along these lines training programs for correctional officers, changed role definitions for some and a *meaningful* program of mental health treatment within our institutions must occur.

Violence reduction is a worthy goal for each of us, our families and our society. It is as important as a road, a civic building, a bridge, or a new sewer.

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POISONINGS IN ALASKA 1973

Emil L. Cekada, M.P.H.

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(18) <input type="checkbox"/> CAROS (19) <input type="checkbox"/> OTHER (Specify)						
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POISONING REPORT

A poisoning has been called an interaction between a person, a hazardous substance and certain environmental factors. In the State of Alaska last year, 671 of these interactions were reported through the Area Pharmacy Branch, Alaska Area Native Health Service Office in Anchorage. This is an increase of 285 over the preceding year.

MATERIALS AND METHODS:

Case reports are received from hospitals, clinics and physicians on computer cards. (Figure 1) The support of health care facilities and personnel in reporting poisonings has been sought while performing on site visits of both Alaska Native facilities and those of the private sector. Cooperation has been accomplished on an individual basis. New reporting sources are continually being sought. Cooperation is the limiting factor of future data gathering successes.

Chief, Area Pharmacy Branch
Alaska Area Native Health Service
P.O. Box 7-741
Anchorage, Alaska 99510
Phone: 279-6661 Ext. 308/380

Figure 1, Poisoning Report

Reports are compiled monthly when received and no attempt at this time is being made to correlate incidence to the time of the year.

Two hundred and fifty-two of these reports or 38% were submitted by the Alaska Native Medical Center and involved either treated cases or health personnel from other facilities seeking information. The additional reports were received from 21 hospitals, clinics and physicians, as shown in Table 1.

Table 1
ORIGIN OF POISONING REPORTS, 1973

Source	No. of Reports	% of Total
Alaska Native Medical Center, Anchorage	252	38%
Fairbanks Memorial Hospital	102	15%
Bartlett Memorial Hospital, Juneau	78	12%
Ketchikan General Hospital	54	8%
Anchorage Community Hospital	43	6%
Alaska Native Hospital, Kotzebue	36	5%
Alaska Native Hospital, Bethel	31	5%
Alaska Native Hospital, Barrow	18	3%
Alaska Native Hospital, Mt. Edgecumbe	17	3%
Faith Hospital, Glennallen	11	2%
Center for Disease Control, Anchorage	9	1%
Kodiak Island Borough Hospital	3	—
Maynard McDougall Hospital, Nome	3	—
Seward General Hospital	3	—
Cordova Community Hospital	2	—
Kenai	2	—
Valdez	2	—
Homer Hospital	1	—
Alaska Native Hospital, Kanakanak	1	—
Petersburg General Hospital	1	—
Port Lions	1	—
Alaska Native Hospital, Tanana	1	—
	671	100%

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Precautions: As with other thyroid preparations, an overdosage of SYNTHROID (sodium levothyroxine) may cause diarrhea or cramps, nervousness, tremors, tachycardia, vomiting and continued weight loss. These effects may begin after four or five days or may not become apparent for one to three weeks. Patients receiving the drug should be observed closely for signs of thyrotoxicosis. If indications of overdosage appear, discontinue medication for 2-6 days, then resume at a lower dosage level. In patients with diabetes mellitus, careful observations should be made for changes in insulin or other antidiabetic drug dosage requirements. If hypothyroidism is accompanied by adrenal insufficiency, such as Addison's Disease (chronic adrenocortical insufficiency), Simmonds's Disease (panhypopituitarism) or Cushing's syndrome (hyperadrenalinism), these dysfunctions must be corrected prior to and during SYNTHROID (sodium levothyroxine) administration. The drug

should be administered with caution to patients with cardiovascular disease; development of chest pains or other aggravations of cardiovascular disease requires a reduction in dosage.

Contraindications: Thyrotoxicosis, acute myocardial infarction. **Side effects:** The effects of SYNTHROID (sodium levothyroxine) therapy are slow in being manifested. Side effects, when they do occur, are secondary to increased rates of body metabolism; sweating, heart palpitations with or without pain, leg cramps, and weight loss. Diarrhea, vomiting, and nervousness have also been observed. Myxedematous patients with heart disease have died from abrupt increases in dosage of thyroid drugs. Careful observation of the patient during the beginning of any thyroid therapy will alert the physician to any untoward effects.

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1 *Synthroid* is T₄.

2 Because T₄ converts to T₃ at the cellular level, it provides full thyroid replacement at maintenance doses.^{1,2}

3 T₄ hormone content is controlled by chemical assay.

4 *Synthroid* is assayed chemically; no biologic test is necessary to measure potency.

5 *Synthroid* provides predictable results when used with current thyroid function tests.

6 *Synthroid* is the most prescribed brand name of thyroid in the U.S. and Canada.

7 Sodium levothyroxine in *Synthroid* tablets is chemically pure. It does not contain any animal gland parts.

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In most cases with side effects, a reduction of dosage followed by a more gradual adjustment upward will result in a more accurate indication of the patient's dosage requirements without the appearance of side effects.

Dosage and Administration: The activity of a 0.1 mg. SYNTROID (sodium levothyroxine) TABLET is equivalent to approximately one grain thyroid, U.S.P. Administer SYNTROID tablets as a single daily dose. In hypothyroidism without myxedema, the usual initial adult dose is 0.1 mg. daily, and may be increased by 0.1 mg. every 30 days until proper metabolic balance is attained. Clinical evaluation should be made monthly and PBI measurements about every 90 days. Final maintenance dosage will usually range from 0.2-0.4 mg. daily. In adult myxedema, starting dose should be 0.025 mg. daily. The

dose may be increased to 0.05 mg. after two weeks and to 0.1 mg. at the end of a second two weeks. The daily dose may be further increased at two-month intervals by 0.1 mg. until the optimum maintenance dose is reached (0.1-1.0 mg. daily).

Supplied: Tablets: 0.025 mg., 0.05 mg., 0.1 mg., 0.15 mg., 0.2 mg., 0.3 mg., 0.5 mg., scored and color-coded, in bottles of 100, 500, and 1000. Injection: 500 mcg. lyophilized active ingredient and 10 mg. of Mannitol, U.S.P., in 10 ml. single-dose vial, with 5 ml. vial of Sodium Chloride Injection, U.S.P., as a diluent. SYNTROID (sodium levothyroxine) for Injection may be administered intravenously utilizing 200-400 mcg. of a solution containing 100 mcg. per ml. If significant improvement is not shown the following day, a repeat injection of 100-200 mcg. may be given.

1. Braverman, L. E., Ingbar, S. H., and Sterling, K.: Conversion of Thyroxine (T₄) to Triiodothyronine (T₃) in Athyreotic Human Subjects, *J. Clin. Invest.* 49:855-64, 1970.

2. Surks, M. I., Schadlow, A. R., and Oppenheimer, J. H.: A New Radioimmunoassay for Plasma L-Triiodothyronine: Measurements in Thyroid Disease and in Patients Maintained on Hormonal Replacement. *J. Clin. Invest.* 51:3104-13, 1972.



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RESULTS

1. PERSON CHARACTERISTICS:

In order to interpret the data adequately, the cases reported have been broken down by age groups and comparisons made between 1972 and 1973. (See Table 2)

The 0-5 age group had the highest frequency of poisonings, a finding similar to national trends. The frequency masks the fact that there was an actual decrease in 1973 of 8.4 in the relative percentage of distribution of cases. Even more significant are the other age groups. In 1972, the only other groups with over 6 percent of the total cases were 16-20 and 21-25. In 1973, five age groups had more than 6 percent of the total number of cases. All were in age groups over 16 which shows that poisonings are no longer a problem of just infants and children.

Table 2
DISTRIBUTION OF CASES BY AGE GROUP
AND PERCENTAGE OF TOTAL

	1972		1973	
	No. of Cases	Percentage	No. of Cases	Percentage
Birth - 5	171	11.3	211	35.9
6 - 10	6	1.6	12	1.8
11 - 15	21	5.1	33	1.9
16 - 20	51	13.2	81	12.0
21 - 25	32	8.3	80	11.9
26 - 30	19	4.9	17	7.0
31 - 35	10	2.6	13	6.1
36 - 40	13	3.4	33	1.9
41 +	9	2.3	10	6.0
Adults (Age Not Listed)	11	2.8	7	1.0
Total	386	100%	671	100%

In 1972, 38 percent of the cases involved those over the age of 16, compared with a figure of 49% in 1973. These involved most of the self-poisonings which include suicides, suicidal gestures, and the "kicks/trip" categories.

The following graphic chart reflects the increases in reported cases. (Figure 2) There was a 73.8% increase in 1973 when compared to 1972. This increase is greater than one would expect with normal changes in population. It is more than one would expect with better reporting. Therefore, I conclude that even with larger than normal population changes and better reporting, the incidence of cases has increased.

2. HAZARDOUS SUBSTANCE:

A hazardous substance can most easily be defined as any agent which can or did cause injury to the body.

For all poisonings, 874 substances were involved, for an average of 1.3 per report. Six hundred and fifty-eight or 75% were classified as medicines and 216 as nonmedicines. In 159 cases or 23.7%, more than one agent was involved. This could be a factor in accounting for only seven deaths. Multiagent poisonings involved from two to seven substances per case.

In Table 3, the frequency of poisonings with

those agents classified as medicines and the percentage of the total cases which involved the substance, are given.

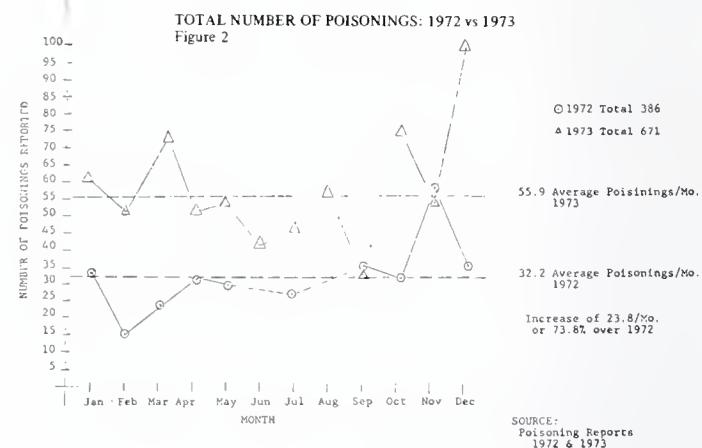


Table 3
FREQUENCY OF POISONING WITH MEDICATIONS
FOR 1973

Item	Frequency of Involvement	Percentage of Total Cases
Alcohol	92	13.7
Aspirin Tablets	83	12.1
Valium® Tablets (all sizes)	58	8.6
Drugs Unknown	20	3.7
Librium® Capsules (all sizes)	21	3.6
Darvon® (All salt forms)	22	3.3
Vitamins (nonpediatric)	13	1.9
Anacin® Tablets	11	1.6
Contac®	11	1.6
Ibuprofen	11	1.6
Benadryl® Capsules & Elixir	9	1.3
Ferrous Sulfate Tablets	9	1.3
Somnifix	9	1.3
Phenobarbital	8	1.2
Actifed® Tablets & Syrup	7	1.0
Congesprin®	7	1.0
Chewable Vitamins	7	1.0
Elavil	7	1.0
Mellaril	6	0.9
Elavil	6	0.9
Dilantin	6	0.9
Nytol	5	0.8
Dolmane	5	0.8
Erythromycin	5	0.8
Pyridium	5	0.8

Alcohol is noted to be the leading agent involved in reported poisonings, being recorded in 13.7% of all cases. All but one case involving alcohol was multiagent in nature. Its classification as a medicine was continued for comparison with previous data.

Aspirin was also involved in many of the multiagent poisonings. Few reported cases specified baby aspirin, which could be based on the popularity of liquid analgesic-antipyretic preparations. The frequency of cases involving Valium®, Librium® and Darvon® can be attributed to their availability based on their popularity with prescribers.

The importance of various groupings of nonmedicines based on the number of times they were involved in poisoning cases would not compare to national trends.

Table 1
FREQUENCY OF POISONINGS OF NONMEDICINES
FOR 1973

Item	Frequency of Involvement	Percentage of Total Cases
Street Drugs		
LSD 9		
Unspecified 1		
Heroin 5		
Mescaline 1		
Speed 3		
Grass 1		
Peyote 1		
Bleach		
Glue		
Model 7		
Unspecified 1		
Food		
Toilet Bowl Cleaner		
Perfume		
	30	1.2%
	13	1.0%
	11	1.0%
	10	1.1%
	4	0.5%
	3	0.3%

A physician should not request

Street drugs, bleach and glue were the only groupings to show any importance. What was significantly impressive was that of the 117 items involved in nonmedicine poisonings, 86 were reported only once. But the products looked like a commercial who's who! Ajax,® Calgonite,® Comet,® D-Con,® Drano,® Heet,® Lysol,® mercury from a thermometer, power steering fluid, tree fungus, Safeway Dishwashing Liquid and Shell No Pest Strip.

3. INTERACTION OF PERSON AND HAZARDOUS AGENT:

All poisonings involving individuals age ten or less were considered accidental by those reporting the case. None could be determined as repeaters during the year. One death occurred in this age group, an 18-month-old male who ingested ferrous sulfate tablets. The medication looks like M & M candy.

The 16-35 age group showed the largest increase in frequency of poisonings and the greatest difference from last year. Poisonings were mostly from medications. The "Kicks/Trip" category was prominent in the 16-25 age group, with suicidal attempts or gestures prominent in those over 25. Six deaths were in these groups:

1. Sixteen-year-old male from Everclear®—obstructed aspiration secondary to drinking large amounts.
2. Fourteen-year-old female from inhalation of PAM.®
3. Twenty-five-year-old male from heroin and barbiturates.
4. Thirty-five-year-old from Darvon,® Valium® and alcohol.
5. Twenty-five-year-old female from sodium salicylate tablets.
6. Forty-four-year-old female from aspirin.

In 1972, there were three deaths reported. Two involved Darvon® and one INH.

Another fact which helps show the morbidity connected with poisonings is the number of admissions.

Table 5
COMPARISON OF ADMISSIONS TO HOSPITALS
AND POISONINGS REPORTED

	1972	1973
Number of poisonings reported	86	106
Number of poisonings admitted	30	27
Percentage admitted	27%	25%

Many of these are only for the purpose of 24-hour observation, but some were reported for more than 10 days. Since most reports come from emergency room personnel, reliable data are just not available on length of stay.

DISCUSSION

All poisonings in children are preventable. Many serious effects with adults could be lessened. The need for educating the public and health care professionals on how to avoid poisonings has been stressed by many. Lack of exchange of information among hospitals and physicians has been noted in this State by the press.

The Safety Packaging Act of 1970 now requires safety standards for packaging on most drugs and many household items. All prescription drugs will have to be dispensed in safety containers unless otherwise requested by the physician and/or patient. Unless the patient is handicapped (example: an arthritic), a physician or pharmacist should not honor their request to have a prescription dispensed in a nonsafety container. If they have a handicap, unit dose packaging might be a suitable alternative.

A physician should not request "Take as Directed" as the only directions on a label. A patient can forget or become confused. A physician should keep the number of doses on a prescription within reasonable limits. Are 200-300 Valium® tablets, Librium® capsules, Dalmane® tablets or a pint of Actifed® Syrup really needed? More specific refill instructions might obviate a nuisance visit and still not lead to an episode of poisoning at a later date.

Other suggestions for physicians are:

1. Suggest only over the counter medications which come in safety containers.
2. Request that all medicine containers be labeled with name of medicine, strength and number of doses. This will help in the treatment of a poisoning.
3. Don't tell children medications are candy and don't encourage parents to do this.
4. Encourage parents not to take medications in front of children.
5. Suggest that patients store medications in locked cabinets.
6. Encourage campaigns to clean out old medications in the home.

7. Encourage patients to keep medications in their original containers.

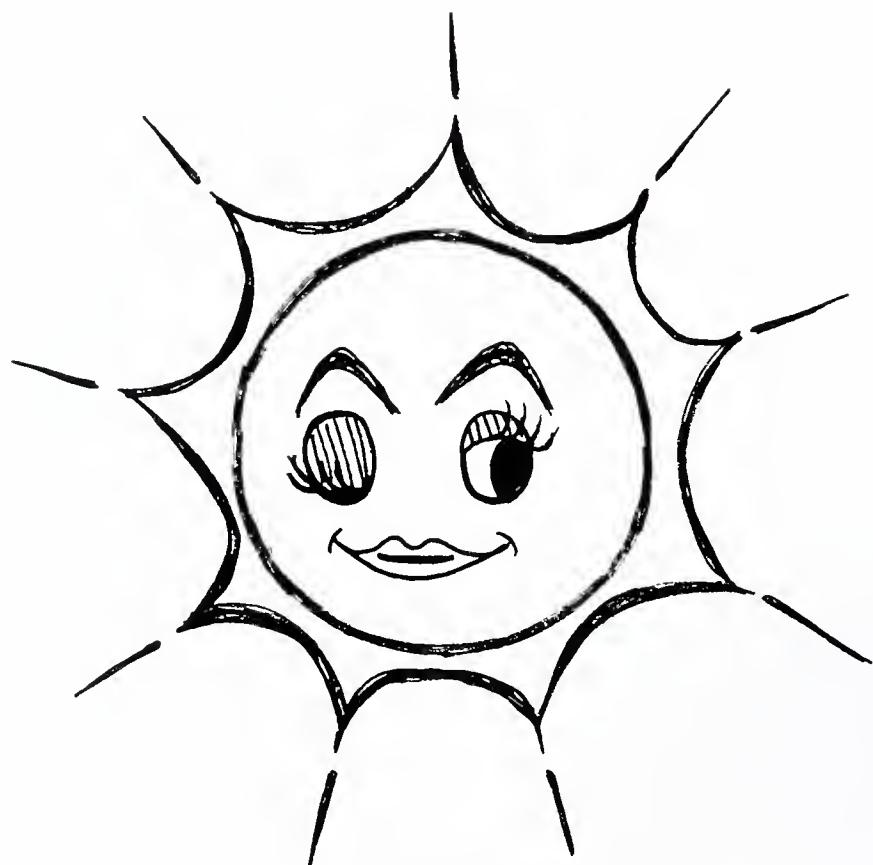
All medical personnel need to take part in the reporting of poisonings. This fact was reinforced with the recent death from PAM® Spray in Anchorage. This death is officially the second associated with this product, unofficially in the newspaper it is the fourth. It might just be possible that the unreporting of the latter influenced the actions in the reported deaths. If you would like to take part in the poisoning reporting system, report forms as previously mentioned will be supplied. Information on patient's name, address and parent or guardian is not requested. Only initials and/or chart number is needed and the area of residence.

All poisonings are preventable to some degree. It is just a question of who is willing to become involved in influencing the prevention.

For further information and/or supply of forms, please write or call the author.

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PRESIDENT'S PAGE

A WAY TO REDUCE OR ABOLISH MALPRACTICE INSURANCE COSTS

The present system of tort liability in the United States encourages court action in personal injury suits. It does not encourage settlement out of court as do systems in Canada and England. Partly because of this "day in court" principal judgments of ever increasing amounts are awarded in malpractice action against physicians. This adds importantly to the cost of practicing medicine. Some say cynically that doctors should not mind since they can pass their increasing professional liability insurance costs on to their patients. This is not easy to do. One might as well say that a physician should not mind if his office rent were increased tenfold since he could pass this cost on to his patients. A point comes where it is not financially feasible to practice at all.

One way to solve the problem would be to incorporate into national health insurance a system for paying patients who are injured by medical care. Since review of care, perhaps similar to PSRO, will undoubtedly be a feature of any national health insurance scheme that Congress enacts, why not require the review committee, or a subcommittee, to adjudicate claims by patients of injury by medical people or institutions? If physicians are to be trusted to review appropriateness of care, they can also be relied upon to adjudicate claims of injury impartially. After all, who can determine injury better than a doctor?

If injury is found, an award in an amount similar to state workman's compensation schedules could be paid at once. Timely adjudication and prompt payment would fully satisfy most patients. It would be wise to exclude payment for pain, suffering, and loss of companionship and consortium as these are not quantifiable and are notoriously subject, with barristerial coaching, to histrionic distortion.

If injury was not found or if the award was not considered adequate by the claimant, he should have the right to appeal from a local ruling to an area review committee and eventually to courts. Few claims would survive review by two panels of physicians.



Rodman Wilson, M.D.

Awards for injury should be made without initial regard to fault. But records of physicians and institutions involved should be kept and perhaps referred to licensing boards for action if repeated offenses occur. Alternatively, physicians or institutions could be fined several thousand dollars for continually injuring patients or they could be drummed out of the national health insurance system — harsh penalty indeed.

Opposition will come, of course, from trial lawyers who will claim that rights are denied. Not so. Rights are more frequently denied under the present tortuous system which sees so small a trickle of liability insurance premium dollars ever filter down to an injured person. A program such as proposed could stem the malpractice suit epidemic. Trial lawyers could then turn their talents to more socially anabolic endeavors.

Hundreds of millions of dollars are spent annually by physicians and hospitals for medical liability insurance. If federal planners are sincerely interested in reducing health costs, as they say they are, here is a place to start.

NORTHERN HIGHLIGHTS - 16

SELECTED ABSTRACTS ON MEDICINE AND PUBLIC HEALTH IN THE NORTH

MORE PROBLEMS IN OTOLARYNGOLOGY

Ling, D.; Katsarkas, A.; Baxter, J. D.

Ear disease and hearing loss among Eskimo elementary school children. *Canad. J. Public Health* 65: 37-40, 1974.

This paper reports the results of two otologic and audiologic surveys of Eskimo children carried out in the Frobisher Bay elementary school in April 1972 and June 1973. The authors are with the Institute of Otolaryngology, McGill University, Montreal.

The subjects were 194 children born after January 1, 1960, approximately 45% of the total school population of this age group. All children were given a complete ear, nose, and throat examination and a pure-tone audiometric test on each occasion.

Ear disease was found to be twice as common among boys as among girls. About 30% of boys had chronic otitis media, two-thirds of them with suppuration, as compared with about 15% of the girls, of which about half were purulent. Most ears were unchanged between the two examinations. Among older children, more improved than deteriorated, whereas among younger boys, at least, more ears deteriorated than improved. No new cases of otitis media were found in the whole population at the time of the second examination.

Hearing loss in excess of 30 dB was found in only 26 cases. Twenty-one of these were conductive in nature and the others sensori-neural, presumably due to noise injury. Audiometry was found to be an unreliable guide to the extent of ear disease. Dry ears with perforations generally yielded the worst audiograms.

A survey of 109 Caucasian children at Frobisher Bay school revealed one with serous otitis media and none with hearing loss.

The authors discuss their findings in relation to studies carried out in Alaska. Preventive measures must be directed at the very young, when the disease first develops. The attacks must be prevented if possible by general health measures. Failing that, prompt treatment of the acute attack is essential.

Weymuller, E. A.

Nasopharyngoscopic observations in the Alaskan Native. *The Laryngoscope* : 864-868, 1974.

The author, who is with the New York Eye and Ear Infirmary, reports his findings from nasopharyngoscopic examination of 159 Alaska Natives during the summer of 1973.

It was found that young Alaska Natives have a significant amount of adenoid tissue, as do Caucasians. The amount of this tissue decreases rapidly after puberty, and after age 18, hyperplastic lymphoid tissue is rarely present in the nasopharynx.

In the opinion of the author, the Eskimos seemed to have a wide open eustachian tube orifice. The only slit-like orifices were seen when they were compressed

by an adenoid mass and these were found only in young children. He states further that "it is possible that the angle at which the tube leaves the nasopharynx is different, and this partially explains the frequency of otitis media." Dr. Milo Fritz is quoted, on the other hand, as finding no racial differences in eustachian orifices.

The author also believes that there is a definite relationship between obstructive and infected adenoid tissue and the occurrence of otitis media. He therefore advocates, in agreement with Dr. Fritz, the surgical removal of this tissue in the treatment of chronic otitis media.

In children under 10 years of age, the number of Eskimos in which tonsillectomy and adenoidectomy is indicated is about the same as that of the Caucasian.

Mallen, R. W.; Shandro, W. G.

Nasopharyngeal carcinoma in Eskimos. *Canad. J. Otolaryng.* 3: 175-179, 1974.

The authors report in this paper the high incidence of nasopharyngeal cancer in Eskimos of the Canadian western Arctic, as seen at the University of Alberta in Edmonton.

The hospital in Edmonton serves as a referral center for approximately 4,500 Eskimos. In the period 1951-1971, a total of 14 primary cases of malignancy of the oral cavity and pharynx were reported in Eskimos, and of these 8 were nasopharyngeal carcinomas. All cases were relatively far advanced when first seen and all were fatal. It is possible that other cases never came to medical attention.

Seven of the cases were males, whose average age was 58.3, whereas the sole female patient was 25. Histologically, all cases were epidermoid in origin, with five of them classified as transitional cell carcinoma.

The incidence of nasopharyngeal cancer in this population is approximately one out of 560 Eskimos over the 20-year period, a figure considerably in excess of that found even among certain Oriental groups known to have a very high incidence of the disease.

The authors review in some detail the characteristics of this disease in various Oriental peoples and then describe some of the current views on etiology. No definite causes for this condition have been ascertained.

Although the reasons for the high incidence in Eskimos are not readily apparent, the matter deserves further study.

ANIMAL-BORNE DISEASES

Fay, F. H.

The ecology of *Echinococcus multilocularis* Leuckart, 1863, (Cestoda: Taeniidae) on St. Lawrence Island, Alaska. I. Background and rationale *Annales de Parasit. (Paris)* 48: 523-542, 1973.

This major paper is a detailed account of the ecology of the parasite causing alveolar hydatid disease on St. Lawrence Island, where it was first identified in the Western hemisphere in 1950. The study reports results from an on-going 15-year investigation carried out by the Arctic Health Research Center to elucidate the biologic characteristics of this parasite in animals and man.

The locus for the study was St. Lawrence Island where the biotic interrelationships are fairly clear and where the intensity and extent of infection in animals is probably higher than anywhere else in the world. *E. multilocularis* has also been discovered in animal hosts, however, in Wales, Point Hope, Hooper Bay, and St. George Island, Alaska, and in parts of Northern Canada. The paper describes at some length the physical, meteorological and climatological characteristics of the island and then the major types of flora and fauna which have been found there. The principal animals of interest in the ecology of the parasite are the arctic fox, sledge dog, house cat, which harbor the adult cestode, and the root vole, red-backed vole, masked shrew, and man himself, which harbor the larvae. Other animals have been associated with the helminth, but under unusual circumstances and are not felt to be important in the propagation or transmission of the disease.

The adult worm lives in the small intestine of red and arctic foxes and in the larval stage in the liver of mouselike rodents. Individuals develop to maturity in about 32 days and then release gravid segments for three months or more. Adult cestodes are only about 2mm in length, but a single arctic fox may harbor 10,000-25,000 of them. The segments undergo rhythmic contractions and may contaminate a wide area with eggs. These may further be spread by wind, water, or insects, and may survive for several months.

The eggs are ingested by a vole or other small rodent, presumably in vegetation, and a primary vesicle grows in the liver after 4-12 days. These grow by budding and infective protoscolices develop by about two months.

The principal definitive host, the arctic fox (*Alopex lagopus*) primarily lives on tundra lemmings and voles, which undergo a 3-4-year cycle of abundance. Sledge dogs, nowadays increasingly less common, also have many opportunities to eat voles and hence also are commonly infected with the adult cestodes. In one survey, up to 25% of sledge dogs had taeniid cestodes.

The intermediate hosts of importance on St. Lawrence Island are the root vole (*Microtus oeconomus*), northern red-backed vole (*C. rutilus*) and the masked shrew (*S. cinereus*). Of these the root vole is most abundant and of the greatest importance.

In humans, *E. multilocularis* infection takes the form of an indefinite proliferative larval phase. It continues to invade the liver and the central area of involvement may become necrotic. Most exposures probably begin in childhood but do not become clinically apparent until middle age or beyond. Human exposure is usually from canine fecal contamination of food, water, or other household objects. The frequency of ingestion is directly proportional to the abundance of eggs in the environment. Infection has been shown to be especially common around village and homesites.

It appears that the variations of occurrence of the cestode in definitive hosts (40-100%) and intermediate hosts (2-15.5%) correlate closely with the abundance of the animals in nature; which in turn depends on the 3-4-year population cycle which these animals show.

Pinch, L. W.; Wilson, J.F.

Nonsurgical management of cystic hydatid disease in Alaska: a review of 30 cases of *Echinococcus granulosus* infection treated without operation. *Annals of Surgery* 178: 45-48, 1973.

This paper reviews the results of conservative treatment of the sylvatic form of cystic hydatid disease in Alaska. The authors reported from the Surgical Service of the Alaska Native Medical Center in Anchorage.

Since 1966, 30 out of 32 cases of cystic hydatid disease seen at ANMC have been treated without pulmonary resection. The other two patients underwent operations to rule out malignancy. Most of the patients came from central Alaska where the parasite is known to occur and all had contact with dogs. The median age was 26 years and there was a 3:2 male-female ratio. All had lungs cysts and three patients in addition had cysts of the liver.

Two children were admitted with fever and cough after a spontaneous rupture of a cyst, and the other 28 were asymptomatic at the time the disease was discovered. Three older patients had a needle aspiration of the cyst performed under fluoroscopic control. Twenty-five patients with 27 cysts were followed by routine chest films and 15 of these cysts have undergone spontaneous rupture. In only two patients were significant symptoms apparent — one with wheezing and one with cough and fever. None became seriously ill. Thirteen of the 15 cases were unaware of the cyst rupture except for the expectoration of fluid in three patients.

Laboratory studies were not reliable. Ten patients had intradermal skin tests and only five were positive. Indirect hemagglutination studies were done on 16 patients, but only three were positive.

Of seven patients who underwent bronchography after rupture, six had evidence of localized bronchiectasis. In two of these patients, bronchography before rupture was normal. Perhaps, it is suggested, that this localized damage and some cases of pneumonia are due to the host-tissue reaction resulting from fluid leakage.

It is emphasized that these favorable results are in cases of sylvatic cystic hydatid disease and that similar conservative management is not currently recommended for the pastoral form.

Margolis, L.; Rausch, R. L.; Robertson, E.

Diphyllobothrium ursi from man in British Columbia — first report of this tapeworm in Canada. *Canad. J. Public Health* 64: 588-589, 1973.

The fish tapeworm *Diphyllobothrium ursi* has been reported only three times in man, once from Kodiak Island, once from Fort Yukon and now from the British Columbia coastal region. This report describes the third case. The authors are with the Fisheries Research Board of Canada, the Arctic Health Research Center, and the Lions Gate Hospital.

The case was diagnosed in early January 1973 in a 15-year-old boy residing in North Vancouver, B. C. On two occasions he passed strobila of an unusual tapeworm, but despite treatment with quinacline he

apparently did not pass either the scolex or further segments of the worm.

The boy's father was a salmon fisherman and the patient frequently accompanied him on trips. Although fish was regularly cooked well prior to consumption, the boy's mother sometimes pickled some fish in brine for home use. It is possible that some of the infective plerocercoids could have contaminated the flesh during the cleaning process. More likely, however, as a source of contamination was a home prepared salmon liver paste, which was apparently a special favorite of the boy.

D. ursi is primarily a freshwater parasite. Anadromous Pacific salmon become infected early in life in lakes and then return to complete their life cycle when the new generation of salmon spawn. Unlike the other common *Diphyllobothrium* species, the *D. ursi* plerocercoids do not reside in the body musculature, but rather on the stomach serosa, especially of the sockeye salmon, or occasionally on the liver or spleen. Bears are the most common definitive hosts of this parasite.

Steele, J. H.

The epidemiology and control of rabies. *Scand. J. Infect. Dis.* 5: 299-312, 1973.

This paper is a detailed review of the epidemiology of rabies in various parts of the world and of the methods available for its control, including a description of the vaccines now in use. This abstract covers only that section of the paper dealing with the arctic regions. The author, after many years at CDC, is now with the University of Texas School of Public Health, Houston.

Rabies was not definitely identified as such in the Arctic until Plummer's studies were reported in 1947, although the disease had been known for a long time before. Since that time, rabies has been recognized in all the land and icebound areas within the Arctic Circle, throughout the globe. In retrospect, it was clear that a large epizootic of rabies was present in Alaska beginning in 1945 and continuing for a decade.

In Alaska the disease is felt to have its reservoir largely in the Arctic fox (*Alopex lagopus*) and to be spread to wolves, coyotes, and dogs by bites. The low incidence in humans is apparently due to the thick protective clothing usually worn.

Russian investigators generally agree that the arctic reservoir is largely in foxes, as do scientists in Canada and Greenland. In the latter country, a large epizootic began in 1963, during which over 1,000 dogs died. The disease was first recognized as such in 1959, although it was present for at least 100 years before that. In

northern Greenland, the fluorescent antibody technique and the mouse inoculation method test were found to be more reliable for diagnosis than the appearance of Negri bodies. The incubation period was generally short.

Another vexing problem in the north is that not all animals with encephalitic signs show laboratory evidence of rabies and the possibility of other diseases must be kept in mind, such as listeriosis and canine hepatitis.

The highest incidence of rabies in the Arctic is in late winter and early spring. Density of population and migration factors are also important.

It appears that the Arctic fox can on occasion carry rabies while in the healthy state. Arctic rodents, incidentally, have not yet been shown to have the disease in the wild.

Kien, L.; Deckelbaum, R.; Mishkin, S.; Wiglesworth, F.W.; Brazeau, M.

Brucellosis in an Eskimo Child. *Canad. J. Public Hlth.* 65: 202-203, 1974.

This brief clinical report describes a single case of brucellosis in a child from the Canadian Eastern Arctic. The authors are with the Montreal Children's Hospital and the Royal Victoria Hospital in Montreal.

The child was a nine-year-old Eskimo boy referred from the Frobisher Bay area for investigation of a fever of three weeks' duration. Prominent physical findings included an enlarged tender liver palpable 9 cm. below the right and a spleen felt 5 cm. below the left costal margin. The hemoglobin was 9.2 gm/199 ml and the white cell count only 3,500/mm.³ with 55% polymorphonuclear cells. A percutaneous liver biopsy revealed portal infiltrates and focal intra-lobular collections of mononuclear cells mixed with lymphocytes. Serum agglutination antibody titers were 1/1280 for *B. abortus* and *B. melitensis* and 1/640 for *B. suis*, type 1.

The boy was given a 21-day course of tetracycline, 1 gm per day, after which he was afebrile and his liver and spleen were nearly back to normal size. Five days later, pain in the hip was noted and tetracycline restarted for three weeks, along with streptomycin, 1 gm per day for the first two weeks. By the 18th day, X-rays, though initially negative, revealed decreased bone density on the lateral metaphysis of the femur. He did well on therapy, however, and was well six months later.

This case is of interest because of the clinical and laboratory findings in the liver, and the osteoarticular complications which developed late and despite treatment. It is noteworthy also that the child's parents showed no antibody titers for brucella.

—Robert Fortune, M.D.



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VOLUME 17, NUMBER 2

MARCH 1975

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ALASKA MEDICINE

Official Journal of the Alaska State Medical Association

Official Journal of the Alaska Dental Society

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Cover:

Front cover picture by Diana Tillion entitled
"Continuity"

The name of the photographer of the striking picture of Mt. Shishaldin on the cover of the January 1975 issue of *Alaska Medicine* was inadvertently omitted. He is Dr. Tom Meyer, a member of the Outpatient Staff at the Alaska Native Medical Center in Anchorage.

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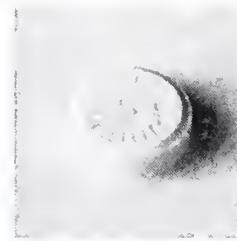
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According to her major symptoms, she is a psychoneurotic patient with severe anxiety. But according to the description she gives of her feelings, part of the problem may sound like depression. This is because her problem, although primarily one of excessive anxiety, is often accompanied by depressive symptomatology. Valium (diazepam) can provide relief for both—as the excessive anxiety is relieved, the depressive symptoms associated with it are also often relieved.

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in the patient within a few days rather than in a week or two, although it may take longer in some patients. In addition, Valium (diazepam) is generally well tolerated; as with most CNS-acting agents, caution patients against hazardous occupations requiring complete mental alertness.

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anxiety states
with associated
depressive symptoms

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Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies.

Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle

spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.



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A NEW APPROACH IN ADDICT THERAPY

Aron S. Wolf, M.D.

Deena Laffe, M.A.

I. HISTORY OF METHADONE TREATMENT

Methadone maintenance as a treatment modality has now completed a full decade of service. Used originally by Drs. Dole and Nyswander to treat ghetto addicts in New York City, it was seen at its beginnings in 1964 as an experimental possibility for alleviating the extremely deleterious effects of the then rampant heroin "epidemic."

The Dole-Nyswander team combined two approaches to the problem of narcotic addiction. Dr. Dole is a specialist in metabolic diseases. His original studies in the 1950's documented significantly different metabolic processes in patients suffering from obesity compared with those who did not have this condition. Wishing to examine the possibility of a similar relationship between narcotics addiction and metabolic malfunctioning he first discovered that there had been almost no research on heroin addiction in its naturally occurring state, on the streets. Almost the only work done involving heroin addiction in a setting other than in a laboratory or a prison was by a psychiatrist, Dr. Marie Nyswander.

Dr. Nyswander's experience included the inpatient setting at Lexington, individual psychotherapy with heroin addicts, and a storefront street approach in Harlem. She had concluded that none of these approaches was particularly effective, and in frustration was considering trying a narcotics-dispensing approach of some kind. Before she could risk a prison sentence for illegally dispensing narcotics, Dr. Nyswander joined forces with Dr. Dole in 1964

and began a research project patterned on Dr. Dole's metabolic obesity studies.

They began a metabolic study using two addicts on an inpatient basis. They used morphine as the drug of choice and administered it on a self-demand schedule. In order to compare responses to several types of narcotics they changed their experimental subjects to a high dosage of methadone. Drs. Dole-Nyswander were immediately struck by the change in activity level of their subjects while on methadone. From a pattern of dozing in front of a TV while on morphine; their functioning on methadone approached the level of normally effective human beings. In addition, methadone as a narcotic had the advantage of being orally ingestible, long-acting and non-euphoric when taken by mouth. It also had a high tolerance level.

After replicating these results with a few more patients, Dole-Nyswander were able to obtain public funding to try the methadone maintenance approach on an expanded basis. By the end of 1973, public methadone programs in New York City and surrounding suburbs had 26,535 addicts in treatment. Most methadone maintenance treatment programs in New York and other areas followed the original Dole-Nyswander pattern of substituting methadone for heroin, and also of providing ancillary services, such as individual and group psychotherapy to retrain the addict in the skills necessary to function in a non-drug-oriented life style, employment counseling and legal aid. The goals of most of these programs involved decreased illicit drug use, a decrease in illegal activities, more appropriate personal relationships, and involvement in a positive vocational or academic activity.

The addicts originally served by the Dole-Nyswander approach were generally the hard-

Psychiatrist, Langdon Psychiatric Clinic. Past Medical Director of the Clinic's drug program.

Counselor, State Mental Health Clinic, Past Clinical Director Langdon Clinic Drug Program.

core urban ghetto addicts who had been using heroin for some time and for whom other treatment approaches had failed. Methadone treatment spread rapidly, if not easily, to other urban areas where it met a demand for some form of treatment capable of dealing with the problem of heroin addiction, and its concomitant social costs. Most treatment units in large urban areas had waiting lists through the 1960's, but by early 1973 the demand for this form of treatment seemed to have passed its peak. Between December, 1973 and March, 1974, there was an increase of less than 1,000 clients in federally funded drug treatment programs, while a comparison of the prior three-month period showed an increase of nearly 9,000 clients.

Despite the fact that methadone maintenance had proven itself to be relatively effective, safe and cheap, this form of treatment has not been instituted in the U. S. without severe opposition.

Although Dole-Nyswander were able to secure local government backing in New York, physicians instituting methadone treatment in other localities ran into a variety of barriers. First of all, there was the problem of the Harrison Narcotic Act, which provides for criminal action against physicians prescribing narcotics for addicts with the purpose of simply keeping them comfortable.

A special exception for methadone was made by designating it as an experimental drug, to be monitored by the Food and Drug Administration, which began promulgating regulations regarding its use in 1969 and 1970. The regulations sought to deal with the use of methadone in various treatment situations, such as brief detoxification, longer-term maintenance and as an analgesic. These regulations became increasingly proscriptive of the power of the physician to administer methadone in a manner that was flexible enough to consider individual patient needs. These proscriptions culminated in the Food and Drug Administration publication of complete regulations for methadone programming that were published on January 15, 1973 and were effective March 15, 1973. These guidelines totally changed many of the previous guidelines and threw most programs into non-compliance.

In 1974, the U. S. Supreme Court ruled that methadone was too clearly established as a safe, effective drug to be regulated by the FDA as an experimental drug. The federal government's response, rather than returning this narcotic to the physician to be used as he saw fit, was to pass legislation making the methadone regulations into statutory law.

In addition, state and local governments

were ordered by the guidelines to provide regulation. In addition, they were frightened at the idea of giving away addictive drugs and also asked to provide funding for such an activity. Thus, they proliferated their own series of "safeguards" and regulations concerning the administration of methadone programs. As example of this additional level of control will be seen in Part II of this paper.

II. BACKGROUND OF LOCAL PROGRAM

The involvement of the authors in the field of methadone treatment came about through the formation of a drug treatment service at the Langdon Clinic.

The clinic's involvement in drug treatment basically began in 1968 when we started serving as the evaluation and after-care agency for Alaska under the Narcotic Addict Rehabilitation Act.

Between 1968 and 1970 this involvement amounted to only a dozen evaluations and eight follow-ups totally. During this same period there were approximately the same number of addicts who requested treatment as private psychiatric patients. All of the above drug patients were simply distributed to various staff members for therapy on the same basis as regular private patients.

In June, 1971, the clinic was faced with a sudden influx of addicts requesting withdrawal from heroin. During the week of June 11-18 alone 11 new addicts were seen. This sudden increase was due to the arrest of two local physicians who had been charged with "illegally" maintaining patients on narcotics.

At this time there were no other actual drug treatment programs in the entire state to which any of these patients could have been diverted. In response to the increased drug patient case load, the clinic began to designate specific staff members on a part-time basis, to treat addicts. During the subsequent year, slightly over 150 patients were seen in the NARA program and in the three-week methadone detoxification program.

The detoxification program shortly proved to be inadequate to deal with the problems of heroin addiction and recidivism that were encountered. A temporary license to dispense methadone on a maintenance basis was secured in March, 1972, and at that time additional staff was hired on a full-time basis.

Within the next year, the program grew to consist of four components: Methadone Maintenance, Methadone Withdrawal, NARA After-Care, and A Clean-Follow-up Outpatient Counseling Program. The maximum number of patients in treatment at any one time during the

history of the program was 70, involved in the four program components. When there were 70 patients in treatment the staff consisted of a part-time psychiatrist-medical director, a full-time program coordinator, a full-time master's level clinical director, a half-time master's level counselor, four para-professional counselors, and four R.N. nurses who shared the equivalent of one full-time nurse's position.

The drug program was operated on a semi-day treatment approach, 7:30 a.m.-7:30 p.m., with heavy emphasis on individual and group psychotherapy and involvement of and referral to community resources.

Financing of the program for the first year, when only detoxification was provided, and for the first three months of the second year, when methadone maintenance was also offered, was on a private fee-for-service basis. Although some patients were able to have their fees paid by the Office of Vocational Rehabilitation, many were not, and it was felt that many of these patients were continuing to obtain their fees by illegal means. Therefore, some public funding of the program was seen as necessary. When the State Office of Drug Abuse, later to become the Single State Agency, included only \$30,000(?) in the FY 1973 budget for drug treatment statewide, clinic physicians responded by meeting with state legislators to help draft a bill that was successfully passed and which provided up to \$500,000 for drug treatment statewide. The clinic was then seen by some as a dominant force in the field, being the only treatment agency as well as a strong lobbyist in securing public drug treatment funds. During 1972, the state allowed the clinic to divert some funds from a welfare contract to provide specific funding for the drug patients. However, with the funds came a building myriad of external controls upon the program. Having passed its initial FDA inspections, the clinic assumed that we were adequately meeting basic standards for methadone programs. However, we were subjected over the next year (1972-1973) to a series of state and borough reviews of the program which were conducted even though neither governing body had any guidelines against which to evaluate such a program but were, they felt, within their new purview as defined by the March 15, 1973 FDA guidelines.

Since the Single State Agency had at least funding control over the methadone program, the clinic implemented many of the suggestions within each series of suggested alterations, even though some of the changes conflicted with each other, and others were simply an expression of the particular evaluator's philosophy of treatment. Such continuous changes in program

administration were costly in terms of confusion to the patient and energy expenditure by the staff, but enough consistency of treatment approach was maintained to enable the program to survive.

Due to conflicts of philosophy, the guidelines were used at times in an effort to have the program close. However, after much agonizing change the FDA informed the clinic in March of 1974 that it would receive its permanent methadone maintenance license in spite of the lack of Single State Agency approval. In addition, the Governor's Advisory Board on Drug Abuse recommended that the clinic receive its funding. The Single State Agency responded by refusing to fund the program under any circumstances.

The clinic decided that a court battle, which their attorneys advised them they could win, would be too costly in time and energy and detrimental to the patients. On August 1, 1974 the Langdon Psychiatric Clinic drug program thus closed.

III. PURPOSE OF THE PAPER

During the three years of operation, our drug programs saw close to three hundred heroin addicts. We shall thus describe demographically this population and also show how these demographic data can be used to develop a consistent treatment approach.

IV. METHODOLOGY

Demographic data regarding the patient upon entering treatment were gathered from patient charts. The patient was described on first contact with the clinic even though he may have subsequently re-entered treatment one or more times.

These data were then computer programmed to give the initial printout of the information in this paper.

RESULTS

Demographically, the addict population of the Langdon Psychiatric Clinic Drug Programs can be described as follows:

Two hundred fifty-five individuals received methadone from June 5, 1970 to July 31, 1974. They ranged in age from 16 to 76, with a mean age of 28 years.

Sixty-four and three-tenths per cent were male and 35.7% were female.

The racial distribution of this group was 75% Caucasian, 17.5% black and 2.7% Native, compared to a racial distribution in the Borough of 91.3% Caucasian, 2.9% black and 5.8% Native.

Twenty-two per cent of the patients were

married, the remainder being either single (54%), divorced (14%), widowed (1.6%) or separated (7.6%). Many of the nonmarried addicts did have rather permanent informal "marital" relationships. Of the 65.9% of the population for whom the father's occupation was known, 65% had fathers who were judged to have a skilled occupation or a professional background.

Forty-two per cent of the patient population had lived in Alaska for over twelve years, and only 11 had lived here for less than six months. (In light of pronounced fears of an increase in criminal activity due to pipeline activity, it will be interesting to see if the statistics of local drug treatment programs two or three years from now indicate an increase in heroin addicts from "Outside").

At first contact with the clinic, 71.5% of the patient population were unemployed, 25.2% were employed and only 2.4% were involved in school on either a full- or part-time basis. In addition, 75.8% of the patient population were unskilled at first contact with the program. Income figures for the patient population were known for only a little more than 50% but of the data that were obtained, 65.6% had incomes below \$400 per month.

The patient population, although largely unskilled and unemployed was also relatively well-educated, at least in terms of grades completed. Sixteen per cent had had some college, 36.3% had completed high school and an additional 23.5% had completed their GED's. Thus, 75.8% could be considered to have at least a high school education.

The arrest records of this population show that for the 56.5% for whom this information was obtained, 60.4% were arrested between one and three times. Only 17.4% were arrested more than three times and 21.5% had never been arrested at all.

Similarly, of the 52.2% for whom we have this information, 53.4% had been convicted between one and three times, 13.5% had been convicted more than three times and 32.3% had never been convicted.

This population did not reflect the background of the hard-core criminal. Of the 47.1% for whom the data were obtained, only 7.5% had spent over three years in jail. At the time of first contact with the program 73% had no criminal charges pending, although these data were only obtained from 20.7% of the addicts, and 68% were not on probation.

Drug usage did not indicate this population to be composed of the long-time, hard-core addict. Only 11.1% had used heroin for more than five years. Thirty-six per cent had used heroin for 2-5 years, 29.3% had used it for 1 to

2 years and 15.3% had used it for six months to a year.

The use of other drugs was not reported by 42.7% of the population. Of those for whom usage was reported, 11.6% reported using no other drugs, 40.4% used more than one other drug, 17.1% used barbiturates, 12.3% used amphetamines, 11% used alcohol and 6.2% used marijuana.

Thus, the Langdon Psychiatric Clinic Drug Program population at the time of first contact with the clinic was composed predominantly of adult Caucasian males in their mid-twenties. They are long-term residents of the area, coming from families where the father had a skilled occupational background. The patients themselves had at least a high school education, but were unskilled and unemployed. Many had had some contact with the criminal justice system, but had served only a short period of time, if any, in jail. They had used heroin for less than five years and probably had used at least one other drug in addition to heroin.

In terms of treatment experience with the clinic, 64.3% were detoxified once, 18.7% twice and 10.6% three times. Only 3.5% were detoxified more than three times. This is a reflection of the program policy that repeated detoxifications indicated that detoxification was not efficacious for the particular patient and he would therefore be denied further opportunity for this approach and referred to a different modality.

One hundred forty-seven of the 255 patients received detoxification only, 63 received maintenance once, 11 twice, and two patients made three attempts at maintenance. Again the upper limit of three was determined by a treatment philosophy which did not readmit patients indefinitely to the same modality.

Of those patients who were on maintenance at least once, the mean length of time was four months. Of the 78 receiving maintenance, 35 or nearly half stayed on maintenance for six months to two years.

This semiurban population is one that is recent, for the spread of addiction into the hinterlands is a very recent phenomenon, while the urban ghetto addiction problem is of at least the last decade. To date, with the exception of one federal inspector who was himself from a sparsely populated western state, we have never seen this patient population difference acknowledged either in writing or in personal contact.

It is true that the urban area population predominates, but its treatment methods are nonrelevant and even exceedingly harsh when applied to the semiurban area addict who is not only well educated but who resembles much more the classic neurotic or psychotic patient

than the so-called sociopathic addict of the ghetto.

DISCUSSION

Having described our addict group, we will now draw some conclusions as to a method of treatment valid for a semiurban, well-educated, "middle-class" group of "junkies."

The traditional methadone program is one based on high security, on a large treatment population and on a low frequency of counseling contact. The goals of these traditional programs have been the provision of a low cost, legal opiate substitute as well as giving some degree of practical aid in dealing with the pressures of the ghetto.

The program model that we are proposing for a semiurban literate and skilled patient population is more comprehensive. It should indeed provide all of the basic medical and coping services, but in addition, it should in the long run deal with the patients' "head trip."

The program can and should function as a surrogate family and involve itself in areas relating to the individual's psychological functioning. During the course of contact, the emphasis for any one patient comes to shift from the practicalities of existence to a much more traditional individual, couple, or family approach.

Within this flexible family model, program patients can build lasting peer relationships within the treatment setting which provide some relationship base for a life style change. Such friendships, while partially negative, can be

modified by the staff in their several roles. Thus it can be seen that the initial dependency upon individual staff members or with the program as a whole was the prime motivating factor in helping the addict to change and grow and meet his needs in ways that other individuals and society find acceptable.

A program, however, that responds to patient needs in a nontraditional manner will find itself at odds with the general expectations of the drug treatment establishment. The differences in approach are labeled naive at best and incompetent at worst. What is not taken into account in these criticisms is that there are indeed differences in the makeup of the urban and nonurban drug using population.

CONCLUSIONS

The demographic data that we have recovered bore out our hypothesis that we had been dealing with a distinctly different patient population than that found in the major urban centers. We feel that as addiction patterns have spread, that many semiurban areas will thus need to change their therapeutic set and approach to these patients.

We feel we have developed a workable model for dealing with this new patient population in terms of their numbers and their life style.

We have also collected a great deal of comparative data and will at a later time dissect out which of our treatment variables was most efficacious.

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TOTAL REPLACEMENT

ARTHOPLASTY OF THE HIP

Declan R. Nolan, M.D.

Total replacement arthroplasty may be defined as a surgical procedure in which prosthetic devices are placed on both opposing surfaces of a given joint. In recent years, this concept has been applied rather successfully to the hip and knee joints.

As applied to the hip joint, the total replacement concept provides an acetabular component and a femoral component. Stainless steel or Vitallium with a highly polished area for articulation is generally used for the femoral component; the acetabular component is composed of high-density polyethylene or stainless steel, depending on the design. Each component is fixed securely to the bone with self-curing acrylic cement, polymethylmethacrylate.

The aim of total hip arthroplasty is to provide a pain-free joint with a good range of motion and normal stability. It should also be long-lasting. By replacing both surfaces, this type of reconstruction achieves this aim more readily than other arthroplasties such as femoral endo-prostheses and cups.

The first total hip arthroplasty was described by Wyles in 1938. In 1951 acrylic cement was used by Haboush in New York. John Charnley began total hip surgery in England in 1951 and is one of the pioneers of modern total joint replacement. In this country, total hip replacement has been performed on a larger scale since 1969.

The indications for total hip replacement include advanced osteoarthritis of the hip, rheumatoid arthritis, failed previous reconstructions, and degenerative arthritis secondary to previous insult such as congenital hip dysplasia, Perthes' disease, osteonecrosis of the femoral head or trauma. Most replacements are performed for advanced osteoarthritis. As the procedure is still rather new, it is generally reserved for patients of middle age or older.

Dr. Nolan is in private orthopedic practice at 3546 LaTouche Street, Anchorage, Alaska 99504.

As with any elective procedure in older patients, a general medical evaluation should be performed prior to surgery. Any concomitant disease such as diabetes mellitus or chronic venous insufficiency of the lower limbs should be controlled prior to surgery. A history of sepsis is the only relative contra-indication to total hip replacement. Ancient sepsis, that is, a history of septic arthritis or osteomyelitis in childhood without any history of recurrence of drainage or inflammation since the initial infection is not a contra-indication. However, with more recent sepsis, it behooves the surgeon to outrule quiescent infection by simple laboratory tests such as CBC and sedimentation rate as well as aspiration of the hip for culture, and possibly arthrography. If underlying sepsis is detected it must be treated prior to total hip replacement.

The procedure is technically more involved in that two components are used and each is fixed in place with methacrylate. This requires a longer operating time. Patients usually require up to two weeks of hospitalization after this procedure. Prophylactic antibiotics are used almost universally and many surgeons also use prophylactic anticoagulation starting on the 4th or 5th postoperative day.

The results of total hip replacement are very gratifying and far exceed the results of previous reconstructive procedures available to orthopedic surgeons. Ninety percent of patients obtain an excellent or good result after total hip replacement. This means the patient obtains complete relief of pain or suffers only an occasional ache in the hip area, has an excellent range of motion of the hip and requires no walking aids.

The long-term results of this procedure are not yet available. However, in November of 1973 a symposium was held in Miami, Florida on the "Current Status of Total Joint Replacement" sponsored by the American Academy of Orthopaedic Surgeons. At this symposium, a 10-year follow-up was presented by one of Charnley's colleagues who related an 8.5 percent

failure rate of the prostheses for one reason or another. Of the remainder, 93 percent were without pain.

The major procedure-related complications of total hip arthroplasty include infection, dislocation, and loosening. Infection is the most serious of these and recent reports relate an infection rate varying between 1 and 3 percent. Most of these figures are based on rather large series with follow-up rate between 1 and 2 years. Most infections are diagnosed within three months of surgery although delayed infection has been reported as late as two years post-operatively. Bacteremia secondary to infected teeth or urinary tract infections may be causative in some of the delayed infections.

Dislocation has become less frequent as further experience with the operation has been gained and also with improvement in some of the designs. Reduction of a dislocated total hip usually requires general anesthesia. Loosening of the femoral prosthesis with its surrounding cement, and wear, are later complications, the true incidence of which we may not know for many years. Charnley has reported wear of the acetabular component of approximately 1 mm per year.

As with any major surgery of the hip in the older age group, cardiac, pulmonary, thromboembolic, and gastrointestinal complications do occur. They do not appear to be more frequent than after other similar procedures.

In summary, total hip arthroplasty is considered an excellent procedure for the patient with a painful, stiff hip joint. The success rate exceeds that of previous reconstructive efforts. Currently, studies are under way to improve design characteristics and to investigate methods of further preventing infection. Within the next few years, further information will be available on the long-term results and hopefully the indications for the procedure can be extended to include younger patients and those with less serious hip disease.

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FUTURE HEALTH CARE IN ALASKA

Lt. Governor Lowell Thomas, Jr.

Health care for Alaskans is a many-splendor ed thing. More persons and families than ever before are receiving greater care both quantitatively and qualitatively. But, at the same time, health care is a many-splintered thing, for there are few placed where one person or one family can secure most of the health services that are needed in a single health center. In a sense the care that some Alaskans secure is fractured. A portion he may receive if his insurance will pay for it, and part of it he may not receive at all unless he is able to dig the money out of his own pocket. Some of the care that people need is immediate, but they won't be able to get it until tomorrow or the next day. This may be too late, or later than they would wish.

Like the opening to *A Tale of Two Cities* by Charles Dickens, we might say about health for Alaskans, "It was the best of times, it was the worst of times." For many persons the best of health care is available and secured, the best health insurance is purchased, and the best patterns of living that protect and strengthen the body have been developed. Notice the joggers, the cyclists, skiers, mountain climbers, the diet-conscious, the non-smokers, the low cholesterol buffs, and so on. But without question, it is also the worst of times for many. Worst in the sense that the whole process of living, from birth to death, the understanding of what makes the body function well or poorly, the question of when to make an appointment with a physician or a dentist, how to select the best and most economical type of health insurance, what foods to avoid and what foods to include, how much exercise to undertake, when to stay home from work with relatively minor symptoms of illness, when to argue with your family, your friends, your business associates, or the salesman, how to let off steam without making enemies, how to speak frankly with a marriage partner, when is a person becoming addicted to alcohol, which physician to go to, what clinic to seek out, which specialist to go to, how much of a medical bill to run up at the doctor's suggestion, exclud-

ing emergencies and absolute medical problems that cannot be denied or delayed — all these are exceedingly complex, but are just a few of the many decisions, problems, questions, and vexations that face more and more people.

By the way, a particularly thorny problem this very moment has to do with *malpractice insurance* — its unavailability. How then may we speak about health care in the future without paying attention to the problems which face us now? Some of which seem insurmountable; and without considering the role of the Federal and the State government, and local government as well as the voluntary health agencies, each with its own brand of medicine, its own panacea, its own requirements, and its own set of human beings.

At any rate, I think the future is rosy for the health of Alaskans. I say this not because we're going to be a wealthy state, or with the thought that money can buy health, but rather because we are a small state by population standards, and have keen and dedicated citizens, both in and out of government, and we have consumer participation to an extent never dreamed of before. All of these assets will assist in the fairly rapid evolution of health activities which can prod us in the direction we must take. This is the path of quality health services, maximum obtainable levels of preventive care, earliest possible stages of treatment and education for health sophisticated enough to produce results. Similar to the Truth in Lending requirement, we should establish truth about health.

Developments in the health field have been numerous at the scientific, laboratory, clinical, and political levels. The Congress, the Alaska State Legislature, and some of Alaska's local governmental units have all been in on the act, in an attempt to affect, or improve, the health of its citizens. More is known now than ever before about the components that alter the health of the individual, of the family, and particularly the health of the community. It is not by accident that the Congress and other levels of government enact health legislation (although it may seem that way with our legislature!).

Talk given at the Annual Banquet of the Alaska Treatment Center, Anchorage, January 23, 1975.

The other day I asked our State health leaders in Juneau what were their chief concerns regarding our health future. They gave me eight, leading off with:

1. Prevention

There will be increased effort and emphasis upon prevention of disease, disability, and accidents. Every unprevented case is obviously costly and harmful to our society. Every dollar spent upon realistic and proven preventive services is far more cost-effective and valuable to society than dollars for care which must be provided as a remedial or terminal approach. The potential for prevention in every field of health is largely unrealized, since many of the scientific developments of recent years have not been implemented through program and budgeting.

2. Children

We are not proud of the health status of our children and what has been achieved to date despite significant progress. Infant mortality rates are still too high. The nutritional status of many children is poor beyond belief. Hearing loss, following chronic ear infections, is embarrassingly frequent and is higher than any other state in the Union. Deaths during the first year of life are among the highest in the nation. And yet these are not the most serious problems!

The most serious according to my advisors, are:

- A. The abysmal ignorance school children have of the human body and how it functions, in health and disease; — and difficulty in treating the family as a unit.
- B. Medical care of the child is an integral part of the whole family's care. As we all know, a great deal of today's health services are absolutely superb. One of the weaknesses, however, is the difficulty in treating the family as a unit, in sickness and in health. Certainly the constant interaction between mother, father and children affects physical health, emotional health, learning, appetite, and feelings. A way must be found for the health professionals to function more as a unit, a team, in the interest of the family unit.

3. Health Centers

In every community, health centers must be strengthened, expanded and supported. The range of services needed by the community is vast, — aside from and in addition to what is provided in physicians' and dentists' offices. These must be accessible to the people who need them. Where indicated, services should be tied in

with the satellite and with other larger health resources. It is essential to simplify the process of seeking and securing health care both for the patient and for the professional provider.

4. Emergency Medical Services

There'll be a statewide network of emergency medical services, each containing the fourteen or fifteen essential components such as ambulance service, communications, emergency room service, education, training of medical technicians, evacuation, and so forth.

5. National Health Insurance

This impending program, when it comes to pass, must be utilized in the Alaskan tradition. First it should be studied and plans developed for the optimal use of National Health Insurance within our own setting. It will involve consumer participation and cooperation and evaluation will be an important component. Above all, it must be available for all of our citizens, so that those needing health care may be assured not only of getting it but of getting it in a timely fashion, an economical fashion, and as an integral part of the total health care needed by the individual and the family.

6. Health Statistics, Health Intelligence, and Health Information

There will be an automated, community health data system based upon individual patient health data. This will be utilized to enable communities and the state to react quickly in recognizing and treating problems such as learning disorders, behavior disorders, congenital anomalies, cancer, high blood pressure, and hereditary diseases. These data will be effectively utilized in terms of planning for appropriate programs, for budget planning, and for effective utilization of funds where they will be most profitably used.

7. Epidemics

Food and water-borne epidemics will be reduced in the future since we are developing investigative techniques in order to anticipate, pinpoint, and prevent the numerous epidemics which occur each year. Most of these can be prevented with greater attention to sanitation and education in food processing or serving establishments, as well as in control of water quality.

8. Accident Prevention

Since Alaska is No. 1 in the Nation in the

rate of accidental deaths, efforts will be made to initiate the type of prevention programs that will be successful. These vary in different parts of the State. While the actual causes in each locality are known, the implementation of an educational and preventive program is the major need at the present time.

I see a new day for Alaskans in the health area, with unusual attempts at resolving some of these problems just mentioned. One of the greatest challenges of the future relates to the new law, PL 93-641, signed by the President in January, "The National Health Planning And Resources Development Act of 1974." This replaces the Comprehensive Health Planning Act, and the Regional Medical Programs. It establishes a National Health and Mental Health Planning and Resources Development System, while extending a revised Hill-Burton health care facilities program. Further, it authorizes the Governor to set up Health Service Areas. The impact of this new law upon Alaska's health may be great and important, if we wish it to be.



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Bioequivalence

The weight of scientific opinion:

If the pharmacist substituted a chemically equivalent drug for the one you have specified for your patient—could you be certain of that product's safety and effectiveness simply because the chemical content is the same?

Definitely not, unless bioequivalence tests and other quality assurance checks had been conducted. The pharmaceutical industry and many scientists have maintained this position for years, but others have questioned it. Now the Office of Technology Assessment of the Congress of the United States has reported on the issue in its Drug Bioequivalence Study.*

Here are a few definitive statements in the O.T.A. report:

"...the problem of bioinequivalence in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, and controls are adequate to ensure

that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.

DRUG BIOEQUIVALENCE

A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:

(a) chemical equivalence; and

(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or
(c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of your prescription...



Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Protecting the integrity of your prescription

PRESIDENT'S PAGE

What Should the Alaska Department of Health and Social Services Be Doing?

On other pages of this issue Lt. Governor Lowell Thomas, Jr. has thoughtful and provocative words about future health care in Alaska. His points are well considered. Health care for Alaska is a "many-splendored" but also a "many-splintered" thing.

The Constitution provides in Article VII Section 4 that "the Legislature shall provide for promotion and protection of public health." The Legislature does this principally by reviewing and funding the programs of the Department of Health and Social Services. The Department has the traditional activities of almost all state departments of health — communicable disease surveillance and control, laboratories, sanitation, inspection of hospitals and nursing homes, mental health programs, administration of federal programs, etc. But do these ancient programs really address the major needs of the public in matters of "promotion and protection of public health?" What should the Department be doing in addition to or perhaps instead of its current activities?

For one thing it should be trying by whatever means it can to get telephone communications to each and every village in the State (yes, Outside subscribers, there are scores of villages in Alaska without a telephone). This is perhaps the biggest single health need in the State. An incredible amount of good medicine can be practiced or planned with a doctor on one end of a telephone and a trained village aide on the other.

For another matter the Department should address its attention much more than to surveillance of anthrax, cholera, and even tuberculosis to factors that really kill people here such as guns, fires, drownings, snowmachines, autos, and aircraft. The Department should lead the way in programs, educational or otherwise, to reduce fatalities from these factors. Counting gonorrhea cases may be fun, but gonorrhea doesn't kill anyone (at least only rarely). Counting cases doesn't stop gonorrhea, and it is questionable whether even identifying contacts does.



Rodman Wilson, M.D.

The Alaska Native Claims Settlement Act of 1971 created twelve regional native corporations. Many of the native corporations are devising their own health care systems, as health maintenance organizations or otherwise. The Department should be saying to them, "How can we help?" Is it?

People are avid for family planning (a euphemism largely for birth control). The State's contribution to family planning is parsimonious. People are avid for hard information and action about food, about pollutants, about hygiene, about how to get a doctor, and what to bother him about. What is the Department doing concerning these matters?

Traditional programs have been well managed and often, as with tuberculosis control, spectacularly successful. But are they what we need now?

Alaska has a new commissioner of Health and Social Services, Dr. Francis Williamson. We applaud his appointment and welcome him back to Alaska. We know that he will design his department's activities to meet the important health needs of us all.

NORTHERN HIGHLIGHTS - 17

SELECTED ABSTRACTS ON MEDICINE AND PUBLIC HEALTH IN THE NORTH

Nutritional and Metabolic Disorders

Mouratoff, G. J.; Scott, E. M.

Diabetes mellitus in Eskimos after a decade. *JAMA* 226: 1345-1346, 1973.

This paper presents the results of a follow-up study of glucose tolerance tests performed on Eskimos of 6 Alaskan villages, to determine whether the low prevalence of diabetes mellitus had changed in this population. The authors were with the Arctic Health Research Center in Fairbanks.

Some 320 Eskimo adults were tested, including 187 individuals who had been examined in 1962. The methods in the two studies were identical. Overnight fasting blood glucose and the blood level 2 hours after 100 gms of oral glucose were measured. A 2-hour level exceeding 150 mg/100 ml was considered abnormal, as was a weight more than 13.6 kg in excess of a standard weight chart for the patient's sex, age, and height.

In comparing only those over 40 in the two study populations, about 6% more persons were overweight and about 4.5% more persons were intolerant of glucose in 1972 than in 1962. When the same cohort was tested ten years later, it was found that the average increase in glucose tolerance in men was only 4 mg/100 ml, a result agreeing with an expected value based on the dependence of glucose level on age. In women, the two-hour level decreased, for reasons not clear. A change in weight of 10 kg was associated with a change in 2-hour level averaging 20 mg/100 ml in men and 16 mg/100 ml in women.

It is suggested that the physical fitness of Eskimos may in part explain the low incidence of diabetes, since fitness can be associated both with a lack of obesity and an increased muscle mass. In the latter instance, there may be faster tissue utilization of glucose and hence greater tolerance. In the past decade the Eskimos have made increasing use of labor-saving devices. The authors feel that as the Eskimos conform more to a Western way of life, glucose intolerance will become more frequent.

Quick, W. W.

Diabetes in Eskimos (letter to editor). *JAMA* 227: 1383, 1974.

In response to the article by Drs. Mouratoff and Scott, the author feels that their data are also consistent with a genetic origin of diabetes. In making routine inquiries of Alaska Native patients who are diabetics, he finds that most are of mixed racial background and some can even identify their diabetic ancestor. He acknowledges, however, that Alaska Native diabetics are rare and has seen none with childhood-onset type. If the rarity of the disease in Eskimos is related to their physical exertion, Dr. Quick asks why the white population of the remote areas is not also free from the disease.

Fisher, O. A.

Diabetes in Eskimos (letter to editor). *JAMA* 227: 1383, 1974.

The author, who is with the Alaska Native Health

Service at Barrow, calls attention to seven known Eskimo diabetics in Barrow, all of them identified since 1966. All are somewhat overweight and all but two were over 65 when discovered. Fasting blood glucose when first seen ranged from 176 to 673 mg/100 ml and the current weights of these patients are between 69 and 107 kg.

Bell, R. R.; Draper, H. H.; Bergan, J. G.

Sucrose, lactose, and glucose tolerance in northern Alaskan Eskimos. *Amer. J. Clin. Nutrit.* 26: 1185-1190, 1973.

In this study a group of northern Alaskan Eskimos were subjected to tests to determine their tolerance to glucose, lactose, and sucrose. Diabetes mellitus is known to be rare in this group and in the traditional diet, lactose was not normally present after weaning and sucrose was not present at all. The present investigation sought to evaluate the ability of these Eskimos to adapt to these dietary changes. The authors are from the University of Illinois (Bell and Draper) and from the University of Rhode Island (Bergan).

Glucose tolerance tests were performed on 17 healthy adults from 18 to 60 years of age. None showed a diabetic type curve after a 100 g. glucose load, nor did any demonstrate a delayed insulin release pattern. The pattern was similar to that of southern Alaskan Eskimos.

Lactose malabsorption tests were done on 20 adults from 25 to 59 years of age, by giving each 10, 20, or 30 g. doses of lactose after an overnight fast. Thirteen developed diarrhea (65%) at or below the 30 g. dose, but only one got diarrhea after 10 g., equivalent to one cup of milk.

Lactose tolerance tests were also done on 27 healthy children 7 to 14 years old. Nineteen (70%) failed to show a blood glucose rise of 20 mg/100 ml or more within 1 hour of a 50 g. dose. Fifteen (56%) developed diarrhea about 2 hours after ingestion.

Sucrose tolerance tests were carried out on 6 adult Eskimos with a history of diarrhea and cramps after consumption of sucrose. Five of these had flat glucose curves and experienced diarrhea within 2 hours of ingestion. The sixth was the father of two of the subjects found to be sucrose-intolerant. He had a normal blood sugar response and had no symptoms.

Sucrose or lactose malabsorption should be considered in the presence of persistent unexplained diarrhea in Eskimos. Sucrose intolerance is the more clinically significant condition since it imposes greater dietary restrictions.

Desai, I. D.; Lee, M.

Nutritional status of Canadian Indians: I. Biochemical studies at Upper Liard and Ross River, the Yukon Territory. *Can. J. Public Health* 65: 369-374, 1974.

This paper reports the results of biochemical studies performed on Arctic Indians of the Yukon Territory, as part of a larger survey of nutritional status among Western Canadian Indians. The authors are both with the University of British Columbia at Vancouver.

Upper Liard is an Athapaskan village only a few miles by road from Watson Lake, while Ross River is a

much more remote Athapaskan community, some 230 miles north of Watson Lake. At Upper Liard 195 persons were examined, compared with 115 seen at Ross River.

Evaluation of data on plasma proteins, carotene, and vitamin A showed that mean values were in an acceptable range. The same was true for urinary thiamine, riboflavin, and N-methylnicotinamide levels. Mean serum cholesterol values were relatively low and portended no problems.

With respect to hemoglobin, hematocrit, and plasma iron values, all tended to suggest an anemia problem among the men at Upper Liard which was probably related to dietary iron deficiency. The children had little evidence of anemia.

Plasma ascorbic acid values for children were high at both communities, but mean values for both adult men and women were considerably lower and perhaps even borderline for the women. Seasonal variations could not be ruled out.

The results are discussed with regard to possible dietary interventions to correct deficiencies.

Desai, I. D.; Lee, M.

Vitamin E status of Indians of Western Canada. *Can. J. Public Health* 65: 191-196, 1974.

The authors of this paper measured plasma levels and dietary intake of Vitamin E in four populations of Canadian Indians. The purpose of the study was to provide basic information on the correlation of diet and plasma levels in order to assist in the development of guidelines for recommended daily allowances.

Subjects were examined at Ahousat (coastal B. C.), Anaham (interior B. C.), Upper Liard (a relatively accessible community in Y. T.), and Ross River (a remote settlement in Y. T.). Comparisons were made with a non-Indian urban population in Vancouver and Chilliwack, B. C. A daily food intake questionnaire was administered, from which Vitamin E intake was estimated. Total plasma tocopherols were measured by a colorimetric method.

No sex differences for plasma values were noted in any community, but the mean values between communities were often considerably different. The Ahousat population had the highest mean value, 1.21 mg/100 ml, and the Anaham group the lowest, 0.60 mg/100 ml. Other Indian groups and the control groups had inter-

mediate mean values. Individual values ranged from 0.06 to 2.28 mg/100 ml. In general, intake patterns paralleled the plasma values. At Ahousat, large amounts of salmon were consumed.

If 0.5 mg/100 ml is taken as the borderline human value, almost one-half to two-thirds of the population of Anaham, Upper Liard, and Ross River had a deficiency of tocopherol. At Ahousat, about 2/3 of the population had acceptable or high values. The plasma tocopherol value appears to increase with age and reflect a storage of the vitamin until tissue saturation.

The present study seems to indicate the possibility of an insufficient intake of vitamin E in the diet of some Indian populations. The clinical significance remains unclear.

Beaulieu, A.

A nutrition surveyor's journal. *Nutrition Today* Jan/Feb, 1974, pp. 15, 17-18, 32-34.

This paper is a relaxed, informal account by a dietitian who was one of the participants in the Nutrition Canada survey in the Arctic during the winter of 1973. The northern team of this major survey usually consisted of 8 persons, a nurse, four dietitians, a laboratory technician, an equipment officer, and a physician. The arctic itinerary lasted several months and included four Eskimo settlements and ten Indian settlements.

The author obviously had no prior experience with northern life and much of her article consists of her discoveries of the joys and frustrations of village existence and the personal characteristics (and differences) of the Eskimos and Indians. The Eskimos were noted to have virtually no interest in food preparation, not only when using traditional foods but also when opening cans or reconstituting prepared foods. Both men and women, however, delighted in talking about food. Despite the apparent unconcern for variety and balance in food selection, no overt malnutrition was seen. The Indians were found to be rather uncommunicative and hostile about the nutrition survey. Game, fish, and wild plants formed the staple foods in most areas and did not vary much even when ready money was available to purchase foods. Candy was noted to be the favorite food in the north for Indians and Eskimos alike.

—Robert Fortune, M.D.

ALASKA MEDICINE



VOLUME 17, NUMBER 3

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THE CURRENT MANAGEMENT OF MALIGNANCY

IV - CANCER OF THE LUNG

Frank J. Panettiere, M.D., F.A.C.P.

Lung cancer does not deserve its reputation of being the most hopeless of all malignant diseases. All too often, when the diagnosis is made, the surgeon states, "It is unresectable, therefore, nothing can be done." Unfortunately, the problem is that nothing is done. Not only is this a terrible situation for the patient physically, as his condition progressively deteriorates, but even more important, it is a miserable situation psychologically for him and his family. Essentially, they are told that everything is hopeless... that things are so bad, that it is not even worth trying anything. The purpose of this article is to relate to you some of the many things that we can do that can help in the treatment of the patient with lung cancer.

CLASSIFICATION

It is important to recall that lung cancer is not one disease, but several different conditions that are quite distinct in histologic appearance, growth characteristics, and response to therapy. Many classifications are used, but in general, we can divide lung cancer into four separate categories (Figure 1.). Most common is the epider-

moid (or squamous cell) type. This variety tends to grow to a relatively large size in its primary site before it metastasizes. An autopsy study shows that even at death, 46% of patients with this variety of lung cancer have no evidence of tumor extent outside of the thoracic cavity¹. This tumor can frequently be handled by a surgical approach. Because of its relatively low propensity to metastatic involvement, patients with this histologic type have the best chance of survival.

Probably the second most frequent form of lung cancer is the small cell undifferentiated (oat cell) carcinoma of the lung. The pattern in this particular tumor is almost exactly opposite to that of the epidermoid. This particular variety disseminates widely very early in its evolution. Usually the first symptoms of this particular type of tumor are outside of the chest. Brain metastases may be what initially brings the patient to the physician, and even at this point, the routine chest x-ray may still be called normal. Another facet of the rapid widespread dissemination of this variety of lung cancer is the fact that at least one-third of patients when they are first seen have already evidence of metastases to the bone marrow, manifested by a positive bone marrow biopsy². Obviously, this variety of tumor which characteristically has such early widespread dissemination is not amenable to surgical cure. In fact, the mortality rate exceeds the surgical survival rate. Therefore, this diagnosis is considered a contraindication for surgical resection. As we will discuss later, the rapid growth characteristics of this tumor make it quite sensitive to a variety of commonly used anticancer drugs. However, until recently, the duration of these responses has been only relatively brief.

The first article of this series, on cancer of the breast, appeared on pages 114-116 of the issue of September 1973; the second article, discussing Hodgkin's disease, appeared on pages 7-11 of the January 1974 issue; the third article, a discussion of lymphoproliferative disorders and leukemias, appeared on pages 89-92 of the July 1974 issue.

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Adenocarcinoma of the lung is approximately as common as the oat cell variety. Generally, its characteristics are intermediate between the relatively localized epidermoid type and the widespread dissemination of the oat cell type. Because this tumor has a relatively slower growth rate, survival duration is intermediate between that of epidermoid and small cell.

The large cell undifferentiated carcinoma of the lung is the least frequent of the four varieties. Generally, initial symptoms are intrathoracic and its pattern of spread is similar to that of the pulmonary adenocarcinoma. Also similar to that cell type is the fact that survival duration is intermediate between the oat cell and epidermoid types.

EPIDEMIOLOGY

Although it has been quite clear that a relationship exists between cigarette smoking and squamous cell and oat cell carcinoma of the lung, it should be pointed out that heavy cigarette smoking is also associated with an increased incidence of pulmonary adenocarcinoma³. In addition, cigar and pipe smoking cannot be considered harmless. The Swiss, as a group, inhale when they smoke their cigars and pipes. They have an increased incidence of lung cancer compared to their nonsmokers⁴. This is an important fact because if a regular cigarette smoker, who therefore is quite used to inhaling when he smokes, were to switch to cigars and pipes, the chances are that he will continue to inhale deeply. Therefore, one could logically expect that this change will not decrease his chance of development of lung cancer.

An important lesson about the latency of carcinogenesis is learned by studying the epidemiology of the development of lung cancer in former smokers. If a former heavy smoker should stop smoking, his chance of developing lung cancer remains greater than that of the nonsmoker, for a period of some 10-12 years after his last cigarette⁵⁻⁶.

NON-METASTATIC COMPLICATIONS OF LUNG CANCER

Certainly widespread complications of lung cancer can readily be explained by metastases. This is especially the case as with oat cell carcinoma which characteristically spreads everywhere. Less readily understood, and therefore with a good deal of emphasis, are the so-called nonmetastatic complications of lung cancer. These fall into five categories: (1) endocrine syndromes, (2) neuromuscular manifestations, (3) dermatologic abnormalities, (4) vascular and hematologic problems, and (5) con-

nective tissue changes. It is extremely important for us to recognize these various syndromes, and therefore, we will discuss them in some detail.

First, the endocrine manifestations. Figure 2, taken from the work of Primak⁷, makes the point that any of the four histologic varieties of lung cancer can produce these abnormal hormonal materials. For example, hormones to stimulate the adrenal cortex are mainly associated with small cell carcinoma, although they have been less frequently seen with the epidermoid and adenocarcinoma varieties. Human chorionic gonadotropin may be elaborated by any histologic type, although most frequently the large cell variety is the one at fault. Likewise, the inappropriate secretion of antidiuretic hormone is most frequently associated with the small cell variety; hormones to increase the calcium level are seen mainly with epidermoid carcinoma, with large cell variety second; and hypoglycemic agents are seen with apparently equal frequency with the epidermoid and small cell varieties.

If the tumor produces excessive levels of ACTH, a form of Cushing's syndrome develops. This is not fully typical of the standard Cushing's syndrome because unlike the idiopathic variety, Cushing's syndrome associated with lung cancer is most frequently seen in older males. This situation has a rapid onset. Therefore, the patient has no opportunity to develop the classical features of Cushing's syndrome such as weight gain, the so-called buffalo hump, and the moon face. Instead, the patient has polydipsia, polyuria, mental confusion, and a hypokalemic alkalosis. Half of these patients have hypertension due to excessive sodium reabsorption. The entire syndrome, including the lethargy and mental confusion, can be improved by correcting the electrolyte abnormalities. To do this, potassium is administered, and salt and water intake are limited. As much as possible the tumor should be removed. If this is not feasible, consideration should be given to removal of the overstimulated adrenal glands. An important additional consideration is that tumors that produce excessive ACTH have been reported also to produce excessive quantities of thyroid hormones and antidiuretic hormones.

Clinically, if a patient has a tumor that produces excessive chorionic gonadotropin, his only problem would be the development of gynecomastia. The other important effect of excessive production of this hormone is that it can result in a positive pregnancy test. Therefore, if a man develops gynecomastia or is found to have a positive pregnancy test, lung cancer should be part of the differential diagnosis. In addition, the positive pregnancy test can be useful for follow-up purposes. If the tumor

responds to therapy, the titer should fall to normal. If the tumor later recurs, the positive pregnancy test should return. Therefore, such a positive test can be quite useful, especially in the patient in whom his disease cannot otherwise be easily followed.

Very important to recognize is the syndrome of the inappropriate production of antidiuretic hormone. Characteristically, several features are present. These include a low serum sodium despite the presence of significant amounts of sodium in the urine. This results in urine that is hypotonic to plasma in the absence of dehydration, hypertension, azotemia or edema. Underlying is excessive water retention which dilutes the blood electrolytes. As a result, the serum sodium falls. When it reaches critically low levels (in the range of 110 meq per liter), signs of water intoxication ensue with resultant anorexia, nausea and confusion. Obviously, if the patient is already known to have lung cancer, the confusion and lack of appetite can be regarded as evidence of terminal dissemination of disease and therefore, nothing is done to correct the problem. As a result, the patient dies from a condition which might have been easily corrected. The usual way of correcting these symptoms from severe dilutional hyponatremia is to correct the electrolyte abnormalities. The usual mistake is to give such people sodium to correct the low serum sodium levels. Not only will this not work because he will promptly excrete the sodium, but also sodium administration is dangerous in that it can cause further water retention in a patient who already suffers from excessive water. Heart failure often results. The correct treatment of this syndrome of inappropriate antidiuresis is strict restriction of water intake to no more than 500 cc per day. If this is done, weight loss will proceed, urinary sodium levels will decline, plasma electrolytes will rise, and most important, the patient's symptoms will clear. Effective surgery, chemotherapy, or radiotherapy can also ameliorate this problem.

In bronchogenic carcinoma, hypercalcemia is only rarely caused by metastatic bone disease. This fact is brought out by the observation of Bender and Hansen⁸. They demonstrated that bone metastases are seen most frequently with the small cell and adenocarcinoma varieties of lung cancer, while these two varieties are almost never associated with hypercalcemia. Hypercalcemia is most frequently seen in the epidermoid variety of lung cancer, with large cell carcinoma second. The chemical picture is typical of hyperparathyroidism with a high serum calcium and low serum phosphorus. Patients are seen with polyuria, polydypsia, weakness, and

lassitude progressing to coma. Dehydration, azotemia, and electrolyte abnormalities causing EKG and EEG changes are frequent. Hypercalcemia can frequently be corrected by rehydration with large amounts of intravenous saline, often supplemented by furosemide diuresis. Corticosteroids, sodium sulfate, sodium phosphate and the drug Mithramycin⁹ are also useful.

Another cause of lethargy and confusion in the patient with bronchogenic carcinoma occurs if the tumor is one which produces insulin-like substances which lower blood sugar. These have been reported in cases of lung cancer, as well as hepatomas and retroperitoneal sarcomas. Treatment is glucose administration and attempts to remove or shrink the tumor.

Therefore, to summarize, a patient who has lung cancer and progressing anorexia, weakness, drowsiness, confusion, lethargy and coma may have a variety of relatively simply-treated medical conditions, besides brain metastases. These conditions are easily found if they are looked for by means of serum electrolytes including calcium, and blood sugar determinations. Much too frequently when a patient is thought to have fatal brain metastases, all of his clinical problems may be corrected by means of such simple procedures, as the administration or limitation of salt or water or sugar. If such problems are appropriately recognized and treated, the patient may live at least several months of useful life beyond the point when he would have otherwise been given up as moribund.

Obviously, this same picture of drowsiness, confusion and coma can be due to central nervous system metastases. An important treatment option to remember here is that non-water retaining steroid hormone Dexamethasone can frequently benefit such a patient. This drug has no direct anti-tumor effect. What it does do is attack the inflammatory reaction and edema around the metastatic tumor in the central nervous system. In so doing, the total bulk compressing normal brain tissue will be decreased. So diminishing pressure on the brain will usually resolve symptoms. The effect is relatively transient because it only affects the inflammatory edema around the tumor and does not prevent the tumor itself from progressing in size. Therefore, this can be used as a temporary expedient to improve the patient clinically prior to utilizing surgery or radiotherapy to attack his tumor. Sometimes Dexamethasone may be used by itself, in the circumstance where the patient is in coma and dying of widespread malignant disease. Here, such therapy may allow the patient to wake up so as to permit him to take care of final problems, such as his will, etc.

OTHER NON-METASTATIC SYNDROMES

There are a variety of non-metastatic neuro-muscular manifestations of lung cancer. These are relatively rare but important to recognize when they occur. The cause of these problems is unknown. They are associated with lung cancer, as well as tumors of the breast, ovary and prostate. There may be a problem of cortical-cerebellar degeneration with ataxia, vertigo, nystagmus, tremor, and dementia. Peripheral neuropathy is a more frequent problem. These patients have paresthesias, sensory loss and often muscular weakness. Another problem is the so-called carcinomatous myopathy. This picture consists of muscle tenderness, wasting and weakness. Predominantly involved are the proximal muscles of the limbs and trunk. The picture is of a polymyositis and frequently the patient is thought to have a primary muscle disease until the chest x-ray is performed. The clinical picture is similar to myasthenia, and like that condition, there is a marked sensitivity to curare-like drugs, which greatly prolong the effect of the agents used in surgery. Unfortunately, unlike classic myasthenia, these patients have little if any benefit from neostigmine. There are other neuro-muscular syndromes, and frequently mixtures of these various processes. Daughtry¹⁰ reported that such neuromyopathy may be seen in approximately 15% of patients with lung cancer. Oat cell carcinoma of the lung is the most frequent type. It is not uncommon for a patient to present with progressive bizarre neuromuscular syndrome, which is relentless and results in death, and only at autopsy is the tiny primary oat cell carcinoma of the lung discovered. Often the autopsy reveals no evidence of any metastases from the primary tumor.

Dermatologic manifestations of bronchogenic carcinoma include the problem acanthosis nigricans which consists of darkly pigmented, confluent, verrucal lesions, with velvety edges. These are seen predominantly in body folds, including the axilli, the groin, the umbilicus, the perianal region and the oral cavity. If this picture is observed in an adult, it usually indicates a malignant adenocarcinoma. Most frequently the primary tumor is intra-abdominal although bronchogenic adenocarcinomas are also associated with it. Another skin condition associated with internal malignancy is dermatomyositis. Classically, the skin problem appears acutely with a violaceous, erythematous rash on the face, upper thorax, shoulders, neck, arms and hands. Usually, proximal muscular weakness and disorders of dysphagia, and cardiac muscle abnormalities follow. In patients with this syndrome, death usually occurs from progressive muscular weakness rather than from direct

tumor growth. Approximately 15% of patients with dermatomyositis occurring over the age of 40 have some visceral malignancy, usually of the lung, stomach or breast.

There are a number of vascular and hematologic abnormalities associated with lung cancer. Recurrent thrombophlebitis is perhaps the most common of these. Typically, these episodes are migratory, superficial, and cause relatively little inflammatory reaction. The etiology is unclear and there is no evidence that resection of the tumor corrects the problem. This syndrome can make the diagnosis of bronchogenic carcinoma difficult, especially if a radiographic shadow can give the appearance of pulmonary emboli. Another problem seen in lung cancer is that of fibrin deposition. If it occurs around the heart valves, then the process of non-bacterial verrucal (marantic) endocarditis can occur with serious arterial embolization, usually to cerebral vessels¹¹. Consumption coagulopathy, with generalized hemorrhage, can also occur. Hematologic reactions to lung cancer include normochromic anemia of chronic disease, leukemoid reactions, with white blood counts as high as 40-50,000, and otherwise unexplained thrombocytosis. (These particular changes are seen as non-metastatic manifestations of bronchogenic carcinoma. If there are metastases to the bone marrow, then a process of leukoerythroblastosis may become evident. This is a situation of metastatic tumor crowding normal bone marrow elements, and characteristically the immature blood cells, namely nucleated blood cells and early white cell precursors appear in the peripheral blood smears.)

For completeness, we should mention the connective tissue abnormalities associated with lung cancer. Clubbing of the fingers is the most frequent peripheral sign of lung cancer. It can be accompanied by more generalized pulmonary hypertrophic osteoarthropathy with periosteal elevation and new bone formation. Usually the distal ends of long bones are involved although the hands, face, ribs, and even the vertebral column can develop this problem. Clinically, we see the sudden development of marked edema and swelling of the extremities. The picture is often confused with acute rheumatoid arthritis and thrombophlebitis.

CHEMOTHERAPY

As mentioned previously, there seems to be great difference in sensitivity of the various types of lung tumors to specific drugs. This is important for us to understand when we read the literature, because so often all bronchogenic carcinomas are lumped together when chemotherapy is discussed. One example of this prob-

lem can suffice. Both nitrogen mustard and Cytoxin are considered to be alkylating drugs. Nevertheless, their effectiveness on different types of lung cancer is quite different. Nitrogen mustard doubles the median survival of patients with epidermoid carcinoma, but has very little effect on patients with oat cell carcinoma. On the other hand, Cytoxin almost triples the median survival of patients with oat cell variety, but only minimally improves the median survival of patients with the epidermoid type. Therefore, the therapy of each of the four main histologic types should be considered separately.

First, we will discuss the epidermoid or squamous cell type. Untreated, the patient with such a tumor where considered inoperable at the time of diagnosis, has a rather short survival. If the tumor is confined to one hemithorax and the patient is given only supportive care, he can expect a median survival of 15.7 weeks. If the tumor has spread beyond the confines of one hemithorax, and the patient is treated only symptomatically, the duration is 9.4 weeks. There is controversy as to whether radiotherapy, even in the relatively localized disease, prolongs survival. However, it often palliates the patient, relieving him of such problems as obstruction of the superior vena cava or of branches of the bronchial tree. Also, it often relieves bone pain. Thus far, chemotherapy with single drugs has resulted in little prolongation of survival in patients with bronchogenic squamous cell carcinoma. There are, however, a number of individual drugs which can unquestionably cause objective tumor shrinkage. Tumors will shrink to half of the original size or smaller at least 20% of the time if such drugs as CCNU, nitrogen mustard, Methotrexate, dibromodulcitol or procarbazine are used. Responses at least 15% of the time are seen with Cytoxin, adriamycin and Velban. These drugs often afford symptomatic relief, but given singly, only rarely prolong life span. Therefore, attempts have been made to improve on this by utilizing various combinations of drugs hoping to increase the response rate and, more importantly, to prolong survival. Today, it would seem that the best regimen for treating bronchogenic squamous cell carcinoma is the so-called BACON combination of Livingston¹². The initial results from this particular combination show that 41% of patients so treated have their tumor shrink to at least half of the original size. An additional 25% of patients have had stabilization of previously rapidly progressive disease. An important point is that the median duration of survival, lumping those two categories together, is well in excess of 30 weeks. Those patients in whom there was no response to the tumor have a median duration of survival

about the same as the historical placebo controls, namely eight and one-half or nine weeks. Therefore, BACON prolongs survival in those patients whose disease shrinks or stabilizes. If tumor growth progresses on BACON, such treatment does not shorten survival. Currently, this regimen is being modified in an attempt to decrease toxicity and further increase responsiveness.

Small cell, oat cell carcinoma of the lung is unquestionably the most sensitive to chemotherapy. Shrinkage to half the original size or smaller occurs between 25% and 80% of the time with anyone of the six following drugs, listed in ascending order: adriamycin, Cytoxin, nitrogen mustard, Methotrexate, procarbazine, and ifosfamide (an analog of Cytoxin with an entirely different spectrum of toxicity). There are many other drugs that are effective less than 25% of the time. Again, with so many different drugs that can be beneficial, a whole variety of different combinations are being tried. Several seem to be effective more frequently than drugs used singly and to cause prolongation of survival. However, these various regimens are currently at experimental developmental stages and, therefore, until the "kinks" are worked out, they cannot be recommended for general use. (One of these combinations has prolonged the median duration of survival from the historical placebo control duration of seven weeks to 36 weeks).

As far as adenocarcinoma of the lung is concerned, here too, a number of single drugs have proven beneficial. Effectiveness with responses at least 20% of the time have been reported with such drugs as methyl CCNU, methotrexate, nitrogen mustard, mitomycin C, and CCNU. Procarbazine, Cytoxin and adriamycin have efficacy in the 15-19% range. Once again, combinations of drugs are being designed in an attempt to improve on this response rate. Thus far, there is no one standout combination that is unquestionably better than any single drug for this particular variety.

Large cell carcinoma of the lung appears to consist of a heterogeneous group of different tumors, including variable portions of patients with poorly differentiated epidermoid and adenocarcinomas. Therefore, there is question as to what may be the best drug management for lung tumors placed in this category. In any case, the literature suggests response rates in the 20-35% range when such drugs as procarbazine, nitrogen mustard, Cytoxin and adriamycin are used. Thus far, no combination of drugs is recognized as being clearly superior to any of the single drugs in the management of this particular tumor type.

To summarize the current situation with

systemic chemotherapy in the management of all types of lung cancer, one can say that there are a variety of different drugs which can be of value in the temporary reduction of tumor size. Although, as a general rule, single drugs have little effect in prolonging life, there seems to be no question that they frequently can cause useful symptomatic benefit.

Localized chemotherapy can also be helpful. Mainly here we are speaking of therapy to manage the problem of malignant pleural effusion. All too often the patient develops severe shortness of breath, and suspects that his tumor is so progressed that he is now dying of suffocation. He is seen, found to have a large malignant pleural effusion. It is tapped, and he receives rapid symptomatic benefit. But of course, the problem is likely to recur. We can try to prevent recurrences by utilizing various cytotoxic agents, such as nitrogen mustard or Cytoxan. If a patient is myelosuppressed from previous chemo- or radiotherapy then a non-myelosuppressive agent, such as Atabrine may be used¹³. These substances are injected into the pleural space after nearly all the pleural effusion has been aspirated. They cause irritation of the visceral and parietal pleurae so that both surfaces stick together. Such an obliteration of pleural cavity prevents reaccumulation of fluid. More reliably effective to prevent reaccumulation of fluid in the pleural space involves the placement of a chest tube. If it is inserted within this cavity and continuous suction applied to keep the cavity empty, then both surfaces will be in contact with each other. Usually after a few days they will adhere together to seal off the area so that reaccumulation of pleural fluid cannot occur. Usually five days to a week of such drainage is required to give the patient such long-term benefits. Practically speaking, what is done is that the amount of drainage from the pleural cavity is measured daily. When drainage ceases, the tube is clamped. If after 24 hours of the tube being clamped,

chest x-rays show no reaccumulation of fluid, then the tube is removed.

SUMMARY

Certainly, metastatic bronchogenic carcinoma today is incurable. On the other hand, so are coronary artery disease and diabetes. For some reason, although the physician will often actively treat the latter two conditions, he feels hopeless and does nothing to treat bronchogenic carcinoma. As I hope this paper has indicated, there are various regimens which can frequently palliate the disease and perhaps also prolong survival. But even if nothing we attempt objectively results in shrinkage of the individual patient's tumor, we are nevertheless helping him. Perhaps the worst facet of having an incurable disease is being told either directly, or by implication, that there is nothing that can be done, and that nothing will even be tried. Certainly, the patient with malignant disease, such as metastatic bronchogenic carcinoma, understands full well, that if nothing is done, his chances of survival are 0%. He understands also, that if something is tried, it might offer some chance of helping him. He does not have to be a mathematician to realize that even a 2% chance of benefit is infinitely more desirable than a 0% chance. I hope that in this paper we have demonstrated that there are several ways in which we have a reasonable chance of objectively helping him.

FIGURE 1.

HISTOLOGIC VARIETIES OF LUNG CANCER

Type	Frequency	Metastases
Epidermoid (Squamous)	30-50%	Late
Small Cell		
Undifferentiated (Oat Cell)	20-30%	Very early
Adenocarcinoma	20-25%	Intermediate
Large Cell Undifferentiated	10-20%	Intermediate

FIGURE 2.

ENDOCRINE SYNDROMES AND LUNG CANCER

Hormone Produced	Epidermoid	Small Cell	Adenocarcinoma	Large Cell
ACTH (or "ACTH-like")	++	++++	++	
HCG (or "HCG-like")	+	+	+	+++
ADH (or "ADH-like")	+	+++		
PTH (or "parathyroid-like")	+++		+	++
Insulin (or "Insulin-like")	++	++		

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ROBERT CLAEYS, M.D.

1921 - 1975

Born in Mishawaka, Indiana, July 4, 1921, he graduated from Indiana University of Bloomington in 1945. During World War II he was a Captain in the Army Air Corps, serving as flight surgeon.

Dr. Claeys was in general practice from 1946 to 1960 in Lynchburg, Ohio, and from 1960 to 1972 he practiced obstetrics and anesthesiology in Wilmington, Ohio. In July 1972, Dr. Claeys came to Alaska and joined the staff of the Peninsula Medical Center in Soldotna.

He was a member of the American Medical Association, past member of the Wilmington, Ohio Elks Lodge and Lynchburg, Ohio Lions Club.

Survivors include his widow, Wanda, of the family home, one son, Stephan of Ohio, his daughter, Mary Susan, of Lawrence, Kansas; foster daughter, Guylene Nartker of Hillsboro, Ohio, and two brothers, Henry of Miami Beach, Florida, and Richard of Palo Alto, California.

BOOK REVIEW

Understanding the Mentally Retarded Child: A New Approach by Richard Koeh, M.D. and Kathryn Jean Koeh. Publishers: Random House, New York. Copyright 1974.

In an age when "saying it like it is" and advocacy for all imaginable social groups is not only accepted, but applauded, it is most fitting that a book about the mentally retarded, a group historically often exploited and certainly shunned is most appropriate. It appears that Dr. Koeh and his wife express prevention possibilities as the basic foundation of a new approach to the problems of mental retardation. In the opening paragraph on the chapter concerning prevention, the spirit of the book is best expressed by the authors, themselves, "The most exciting aspect of the field of mental retardation is the relatively new area of prevention. In the past the discoveries of vaccines against diseases such as Smallpox, Diphtheria and Whooping Cough have been applauded. More recently we have seen a development of the Poliomyelitis vaccine. Some of the recent advances and techniques for preventing mental retardation will have a dramatic impact on the whole field of preventive medicine. As a matter of fact, even now the tools are available to the medical professional to cut the incidence of mental retardation by 50%. What is deplorable is that we have not taken full advantage of these procedures."

The Koehs' book follows a most logical order, beginning with an excellent and enjoyable section on the history of the mentally retarded. It follows with clear definitions for both professionals and lay persons about what mental retardation really is and then deals with specific medical aspects of interest both to the profession and to concerned parents and the public. These include Heredity and Mental Retardation, Prenatal Causes of Mental Retardation, Birth Injuries, Postnatal Causes of Mental Retardation, Down's Syndrome, Phenylketonuria, A Team Approach to the All Encompassing Problems of Retardation, Pseudo-retardation, Progress towards Normalization with emphasis on this process in California today. Sex and the Mentally Retarded, Unproven Treatments for Mental Retardation and Guardianship.

In the Koehs' chapter on Sex and the Mentally Retarded the authors stress that perhaps "one of the main reasons we have isolated people behind locked gates is because we have sexual fears." This brief chapter should come as welcome expression of honesty and openness for parents and to persons dealing with the mentally retarded as this area is one which has been most ignored in the field.

Perhaps the only negative comment one can make about the Koehs' book is their deplorably innocent attitude concerning the slowness of change in established social groups, the medical profession notwithstanding. Social change perhaps should be slow, in order to avoid excesses and worse problems, yet acceptance of scientifically proven and acknowledged prevention techniques is way too slow among our profession. The Koehs' in their enthusiasm and excellent presentation of a topic often found dull to many people in our profession, may well convince a significant percentage of the persons slow in accepting ideas of prevention. If this is the case, then their innocence can certainly be excused, indeed applauded. This book is recommended for all pediatricians, general practitioners, and other medical, health professional persons, educational professionals and all concerned persons working with children and families in the State of Alaska.

George W. Brown, M.D.
Medical Director
Child Study Center



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Warnings: Patients with severe cardiac disease should be given this medication with caution. Fever and possibly heat stroke may occur due to anhidrosis.

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Adverse Reactions: Varying degrees of drying of salivary secretions may occur as well as mydriasis and blurred vision. In addition the following adverse reactions have been reported: nervousness, drowsiness, dizziness, insomnia, headache, loss of the sense of taste, nausea, vomiting, constipation, impotence and allergic dermatitis.

Dosage and Administration: The recommended daily dosage for adult oral therapy is one 15-mg. tablet with meals and two at bedtime. Subsequent adjustment to the patient's requirements and tolerance must be made.

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PEPTIC ULCER DISEASE IN THE ALASKA NATIVES: A FOUR-YEAR RETROSPECTIVE STUDY

William M. Thompson, M.D.

Harold Ackerstein, M.D.

Little is known about the gastrointestinal disease patterns of the Alaska Natives. This report is concerned with a four-year retrospective investigation of peptic ulcer disease among the Alaska Natives. The project was initiated after the authors noted an apparent decreased ratio of duodenal to gastric ulcers.

METHODS AND MATERIALS

Only patients treated at the Alaska Native Medical Center (A.N.M.C.) were included in the study. During the four-year study period from July 1967 to July 1971, there were 211,471 outpatient visits (72% adults) and 18,024 admissions (75% adults). Pertinent data were recorded for each patient included in the study. All radiologic diagnoses of ulcer disease were made by a radiologist.

RESULTS

A total of 167 patients with peptic ulcer disease were found. Ninety-two (55%) of these were duodenal and 75 (45%) were gastric. There were 6 cases of gastric carcinoma and 1 case of gastric sarcoma. No patients were found to have coexisting active gastric and duodenal ulcers; however, nine patients with active gastric ulcers had deformed duodenal bulbs (these 9 patients were included in the gastric ulcer group). One of the patients with a gastric ulcer was thought to

have a benign lesser curvature ulcer by both the radiologist and surgeon. When this patient underwent a laparotomy for bleeding, microscopic examination of the excised ulcer showed a small adenocarcinoma. This patient was the only survivor of the cancer group.

The signs and symptoms of the patients did not differ significantly from the classical description of peptic ulcer disease. A few associated diseases were encountered but were not thought to bear significantly on the ulcer diathesis. The great variation in dietary habits precluded meaningful assessment of the contribution of diet to the occurrence of ulcer disease. No cases of achlorhydria or hypersecretion were encountered. The records indicated that two-thirds of the patients were full-blooded.

DISCUSSION

In a larger Southwestern Indian population studied over an 8-year period, Sievers⁵ found 3 patients with duodenal ulcers, 5 patients with gastric ulcers, and 19 with gastric carcinoma. The patients with duodenal ulcers were non-Southwestern Indians living in Arizona. The differences between the two patient populations are interesting since the Alaskan Athabascan Indian is ethnically related to the Navajo and Apache Indians of the Southwestern United States.⁶ Also, the Natives of Alaska and the Southwest share many medical and social problems. Both groups are isolated from many of the stressful factors prevalent in Caucasian culture and thought important in the etiology of peptic ulcer; however, both groups have a high incidence of psychogenic disturbance, social problems, and alcoholism, which may contribute to the genesis of peptic ulcer disease.^{5,7} There is no satisfactory explanation for the differences in peptic ulcer disease between the Alaska Natives

Drs. Thompson and Ackerstein were formerly with the PHS Alaska Native Medical Center, Anchorage.

Present Address

Department of Radiology
Duke University Medical Center
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Department of Radiology
Massachusetts General Hospital
Boston, Mass.

and the Southwestern Indians.

The ratio of the total number of patients with duodenal versus gastric ulcers in this study was 1.2:1. The ratio of duodenal versus gastric ulcers in the three Native groups are listed in Table I and compare closely to the 1.2:1 ratio for the entire group. All differ from the usually cited 3 to 4:1 ratio.^{1,2,3} The incidence of gastric carcinoma in Alaska Native patients with gastric lesions was 8%, which does not differ from the 3 to 10% cited in the medical literature.⁴

TABLE I
COMPARISON OF RATIOS OF DUODENAL
VS. GASTRIC ULCERS

Populations	Duodenal: Gastric Ulcers
WORLD	3 to 4:1
ALASKA NATIVE	1.2:1
Eskimo	0.9:1
Indian	1.3:1
Aleut	1.7:1

Our results probably do not represent the total population of peptic ulcer disease in the Natives since some of the patients with peptic ulcers (in particular, those with duodenal ulcers) may have been treated at the field hospitals and not referred to the A.N.M.C.. However, the results do suggest a decreased ratio of duodenal to gastric ulcers in the Alaska Natives. Further work must be done to confirm our findings and to develop incidence data as it appears that the Alaska and Southwestern Natives have a lower

incidence of peptic ulcer disease than commonly cited.

SUMMARY

A four-year retrospective study of peptic ulcer disease in the Alaska Native confirmed our suspicion of a decreased ratio of duodenal to gastric ulcers. There were 92 patients with duodenal ulcers, 75 with gastric ulcers, 6 with carcinoma of the stomach and 1 with gastric sarcoma. Ulcer disease in the Alaska Natives differs from ulcer disease among the Southwestern Indians as reported by Sievers.

REFERENCES

1. Silen, W., Peptic Ulcer: In *Harrison's Principles of Internal Medicine* 6th Edition. Ed. Wintrobe, M. M., Thorn, G. W., Adams, R. D., et al. New York, McGraw-Hill, 1970, pp. 1442-1452.
2. Bockus, H. L., *Gastroenterology* 2nd ed., Vol. 1, Philadelphia, W. B. Saunders, 1963, pp. 467-526.
3. Nylus, L. M., and Harkins, N. N., *Surgery of the Stomach and Duodenum*. Boston, Little and Brown, 1969, pp. 203-216.
4. Stevenson, J. K., *Gastric Carcinoma*, op. cit., pp. 387-420.
5. Sievers, M. L. and Marguis, J. R., Duodenal ulcer among southwestern American Indians, *Gastroenterology*, 42:566-569, 1962.
6. Willey, G. R., *Introduction to American Archaeology* Vol. 1: North and Middle America. Englewood Cliffs, New Jersey, 1966, pp. 231-234.
7. A Survey of Public Offenders II: A Comparison of Ethnic Groups, a Study done by the Office of Alcoholism, Department of Health and Welfare, State of Alaska, July, 1970.

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Here are a few definitive statements in the O.T.A. report:

"...the problem of bioinequivalence in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, or controls are adequate to ensure

that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.

DRUG BIOEQUIVALENCE

Office of Technology Assessment
Drug Bioequivalence Study Panel

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:

(a) chemical equivalence; and

(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or (c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of your prescription...



Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Protecting the integrity of your prescription

PRESIDENT'S PAGE

The State of the Association
May 1975

Rodman Wilson, M.D.

Two years ago the Alaska State Medical Association was in deep financial and organizational trouble. Several years of careless spending and a sad misadventure operating a collection agency found us broke and without an executive secretary for the first time in seven years. Some thought that the Association would succumb or at least would survive only in name but not action unless we could raise dues enough to afford an executive secretary. We decided to assess all active members \$270. Seventy-eight percent of 1973 members paid the assessment. This allowed us to pay all our debts, but we have not been able to afford an executive. We are the only state medical association without one.

We have survived only because officers, councilors, committee chairmen, and members have been interested enough to see that the work to do has been done. Without their dedication the voice of private medicine in Alaska would have been mute. In some ways it has been better without an executive secretary. For example, without an executive secretary but with the help of office secretaries, the officers and committee chairmen have done the work themselves, thereby delving more deeply into matters. This makes an important difference in a state as small in population as ours. We speak with more authority when we speak ourselves. We are heard as perhaps never before on matters such as health planning, health education, bush medical problems, the rights of minors, malpractice, and the State Medical Board.

We now again, as in the early 1960's, have money in the bank. Dues are high, \$250 annually (second highest in the nation in 1974), but have not risen since 1973. This journal is published now six times a year and is a literary, artistic, and financial success — the last a rarity these days.

Best of all membership is rising:

	Active	Associate	Total membership
1972	180	5	185
1973	187	10	197
1974	216	19	235

This year so far (April 8) 191 active and 25 associate members have paid dues. We expect



therefore to exceed last year's total membership. There are approximately 280 physicians practicing privately in Alaska.

Except for the continuing disaffection of most of the members of a large clinic in Anchorage, there is no segment of doctors in private practice who characteristically do not join the Association. Some doctors with marginal practices do not. And there are always a few sapphytes who, though successful in practice, are quite willing to share the gains we make for the public and the profession without sharing the cost of securing those gains. Some members do the same with respect to the American Medical Association. They refuse to see that without the continuous efforts of the AMA private medicine would probably have been completely routed by now by the social planners in Washington. Overall 90% of our members join the AMA.

As the Association grows, we eventually will be able to afford an executive secretary again. It will not be feasible until active membership rises to at least 300. Until then it will be necessary to manage as we have for the past two years. Some of the money ordinarily used for an executive's salary can be used for the travel of councilors and committeemen. This is nice.

Dr. Gary Hedges of Juneau begins his year of presidency at the end of May. There will be major logistical problems because the office of the Association is in Anchorage. Ways to reduce this dislocation have been studied by the Executive Committee and the Council. If all of us help, Gary's year will be a good one for the Association. We wish him well.

ALASKA STATE MEDICAL ASSOCIATION ANNUAL CONVENTION Glacier Bay, Alaska May 24-27, 1975

SPEAKERS and SPECIAL GUESTS:

Robert A. Good, Ph.D., M.D., President and Director of Memorial Sloan-Kettering Cancer Center, New York

O. Schaefer, M.D. FRCP (C) of the Northern Medical Research Unit, Department of Health and Welfare, Edmonton, Alberta, Canada

Maynard Miller, Ph.D., Professor of Geology, Michigan State University and Director of the Foundation For Glacier and Environmental Research, Seattle, Washington

Dr. Malcolm Todd, President, American Medical Association

Francis S. L. Williamson, D.Sc., State of Alaska Commissioner of Health and Social Services

Mrs. Howard Liljestrand (Betty), President, Women's Auxiliary to the American Medical Association

SATURDAY, MAY 24

Afternoon:	Arrival of charter planes and scheduled airlines. Check-in at Glacier Bay Lodge
5:00-7:00 p.m.	Get-acquainted Buffet
7:30-8:30 p.m.	Presentation by Dr. Robert Good Subject: The Scientific Revolution In Medicine
8:45-9:30 p.m.	Presentation by Glacier Bay National Monument Naturalist, audio-visual room
9:30 p.m.	ASMA Business Meeting

SUNDAY, MAY 25

7:00-9:30 a.m.	Breakfast — ASMA Business Meeting
3:00 p.m.	ASMA Business Meeting

SCIENTIFIC SESSION

10:00 a.m.	O. Schaefer, M.D. Subject: The Changing Picture of Neoplastic Disease in Canadian Eskimos
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11:00 a.m.

Robert Good, M.D.

Subject: The Immunologic Approach To Cancer

7:30 p.m.

Maynard Miller, Ph.D.

Subject: "Man, Glaciers and Climates"

ACTIVITIES

7:30 a.m.

Cruise Glacier Bay (49 people each cruise)

1:30 p.m.

Hike with Naturalist (Beach or trail depending on tide)

2:30 p.m.

Cruise Glacier Bay

8:45 p.m.

Presentation by Glacier Bay National Monument Naturalist, audio-visual room

MONDAY, MAY 26

7:00-9:00 a.m.	Breakfast — ASMA Business Meeting
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3:00 p.m.	ASMA Business Meeting
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SCIENTIFIC SESSION

9:30 a.m.

Robert Good, M.D.

Subject: Genetically Linked Diseases

10:30 a.m.

O. Schaefer, M.D.

Subject: Nutritional Change and Health Effects in the Canadian Arctic

11:30 a.m.

Maynard Miller, Ph.D.

Subject: "Alaskan Glaciers as Historians of Climate Change"

ACTIVITIES

7:30 a.m.

Cruise Glacier Bay

1:30 p.m.

Hike

2:30 p.m.

Cruise Glacier Bay

8:00 p.m.

Alaska Academy of Family Physicians (annual meeting & elections)

8:45 p.m.

Presentation by Naturalist

TUESDAY, MAY 27

7:00-9:30 a.m. Breakfast -- ASMA Business Meeting and Council Meeting

SCIENTIFIC SESSION

10:00 a.m. Maynard Miller, Ph.D.
Subject: Man, Glaciers and Climates

11:00 a.m. O. Schaefer, M.D.
Subject: Health and Socio-Cultural Change and Canadian Eskimos

ACTIVITIES

7:30 a.m. Cruise Glacier Bay
1:30 p.m. Hike with Naturalist

Afternoon Departure — Charter planes and scheduled airlines.



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4. Bristol Laboratories — Dan Penny	8	
5. Burroughs Welcome Company — Bruce Bowman	6	
6. Eli Lilly & Company — Paul Mitchell	14	
7. Geigy Pharmaceuticals — Frank Comar	11	
8. Lederle Company — Dennis Brandon	10	
9. McNeil Laboratories — Sam Norman & P. G. Smith	16	
10. Mead Johnson Laboratories — John Duffy	13	
11. Organon INC. — Tom Beaudey & Bruce Harris	17	
12. Parke-Davis & Company — Lint Moustakis	3	
13. Pfizer Pharmaceuticals — Charles Lastufka	4	
14. Riker Laboratories — Don Kelly	15	
15. Syntex Laboratories, INC. — Bud Phillips & Al Stoltenberg	12	
16. The Upjohn Company — Bob Gusse	2	
17. Unika, INC. — Tom Soper	1	
18. William Rorer, INC. Michael Ricca	9	
19. Wyeth Laboratories — Harold Mitchell	18	

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ALASKA DENTAL SOCIETY
TWENTY-SIXTH
ANNUAL MEETING
PROGRAM
May 31 — June 3, 1975
Anchorage Westward Hotel
Anchorage, Alaska

SATURDAY, MAY 31, 1975

1:00-6:00 p.m.	Registration, Outside Commodore Room
1:00-6:00 p.m.	Exhibits, Commodore Room
4:00-6:00 p.m.	Opening Meeting, Commodore Room
6:00-7:00 p.m.	Reception, No Host Bar
7:00-9:00 p.m.	Supper Meetings. No Host
9:00-11:00 p.m.	*Executive Council Meeting

SUNDAY, JUNE 1, 1975

8:00 a.m.-Noon	Registration, Outside Commodore Room
8:00-10:00 a.m.	Reference Committee Meetings. Five Table Set-Ups
10:00-Noon	Clinician, Commodore Room
12:00-2:00 p.m.	Delta Annual Membership Meeting. No Host. Portage Room
2:00-3:15 p.m.	Clinician, Dr. Rex Ingraham, Commodore Room
3:30-5:00 p.m.	Clinician, Dr. Rex Ingraham, Commodore Room
7:00-???	Stag Party, President's Suite
7:00-??	Dinner Fashion Show, Kenai/Aleutian Room

MONDAY, JUNE 2, 1975

8:00 a.m.-Noon	Registration, Outside Commodore Room
8:00-10:00 a.m.	*ADS Business Breakfast Meeting, Portage Room
10:00 a.m.-Noon	Clinician, Dr. Rex Ingraham, Commodore Room
12:00-2:00 p.m.	Lunch, Portage Room (With Guest Speakers)
2:00-3:30 p.m.	Clinician, Dr. Rex Ingraham, Commodore Room
4:00-5:30 p.m.	Table Clinics, Kenai Room

7:00-8:00 p.m.	Cocktails, Hosted, Alaska Room
8:00-???	President's Banquet, Luau, Alaska Room

TUESDAY, JUNE 3, 1975

8:00-10:00 a.m.	Registration, Outside Commodore Room
8:00-10:00 a.m.	*ADS Business Breakfast Meeting, Portage Room
10:00 a.m. Noon	Clinician, Dr. Rex Ingraham, Commodore Room
12:00-2:00 p.m.	Past President's Luncheon, Puppet Show, Portage Room
2:00-???	ADS Business Meeting, Commodore Room

*ADS Members Only

All functions opened to everyone except those marked by asterisk.

WIVES' PROGRAM

SATURDAY, MAY 31, 1975

1:00-6:00 p.m.	Registration
1:00-6:00 p.m.	Exhibits
8:00 p.m.-???	Opening Meeting

SUNDAY, JUNE 1, 1975

1:00-3:00 p.m.	Janann Kitchen, Artcetera — Art and Craft Demonstration. Transportation will be provided.
7:00-???	Dinner Fashion Show, Kenai/Aleutian Room

MONDAY, JUNE 2, 1975

8:00-4:00 p.m.	Matanuska Valley Bus Tour. Continental Breakfast at McCavit's on the Lake
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Lunch	Kincaid Farm. Home Grown Food. Soapstone demonstration after lunch.
4:00-5:30 p.m.	Table Clinics
7:00-8:00 p.m.	Cocktails hosted, Alaska Room
8:00-Midnight	President's Banquet, Alaska Room

TUESDAY, JUNE 3, 1975

Noon-2:00 p.m. Past President's Luncheon
Puppet Show, Portage Room

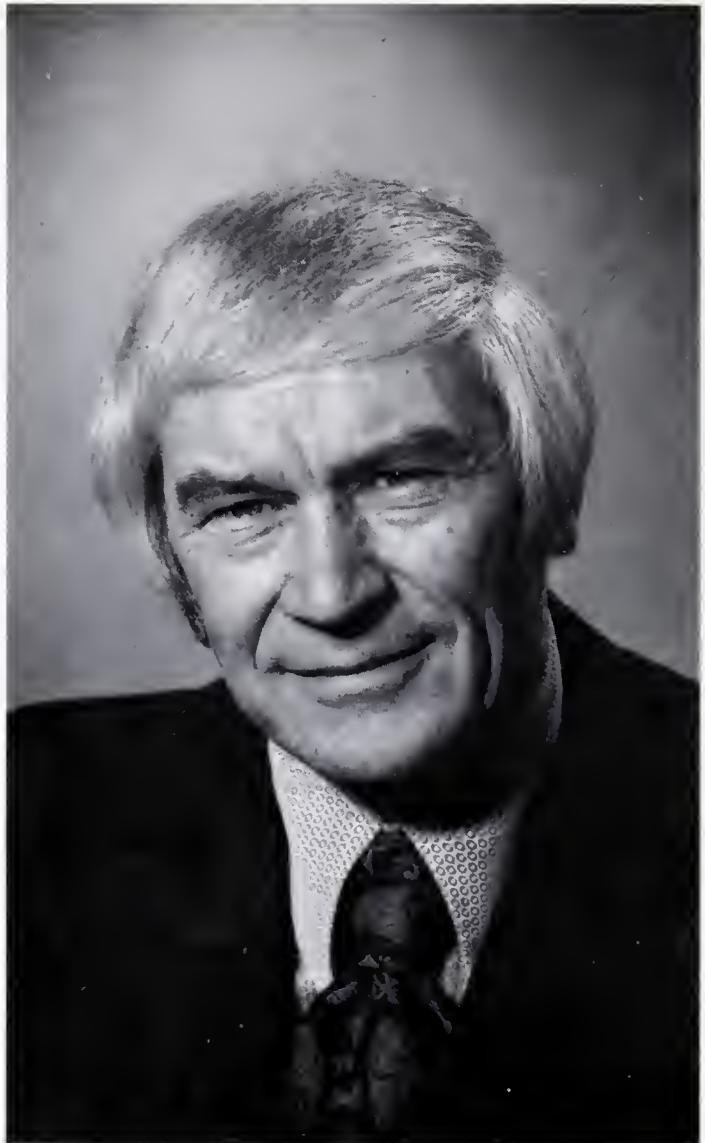
Dental Assistants and Hygienists are cordially invited to attend all functions of the Wives' Program.



WILBUR E. BLINE, D.D.S.
President, Alaska Dental Society

Welcome to our annual meeting! As a Society we have accomplished much over the past 25 years and with further effort we can continue to promote and improve ethical dentistry in Alaska.

Let each of us take this opportunity to rededicate ourselves to superior dentistry, and with the inspiration provided by Dr. Rex Ingraham, the primary clinician of the meeting, success will be assured.



REX INGRAHAM, D.D.S., B.S., F.A.C.D.

Dr. Ingraham is Professor and Head of the Department of Operative Dentistry, University of Southern California School of Dentistry. He is Co-Director of the Jones Gold Foil Study Club of the University of Southern California School of Dentistry and is consultant to the dental staff, Veterans Administration Hospitals, Long Beach and San Fernando, California.

Dr. Ingraham has been an outstanding lecturer, educator and practitioner for many years, has authored numerous articles and books including "An Atlas of Gold Foil and Rubber Dam Procedures," and "An Atlas of Cast Gold Procedure."

Alaskan dentists have always stressed the importance of good operative dentistry and have enjoyed a superior standing in that field. It is especially fitting on this anniversary of 25 years as a Dental Society, that we reaffirm principles, preserve competence and gain further training and insight.

It is a real privilege to have Dr. Ingraham provide the leadership we need at this meeting.

COMMISSIONER'S PAGE

Francis S. L. Williamson
Commissioner
Department of Health and Social Services

I was very pleased that one of my first tasks as the new Commissioner was involvement in the State Program Development (SPD) Conference held in March in Anchorage.

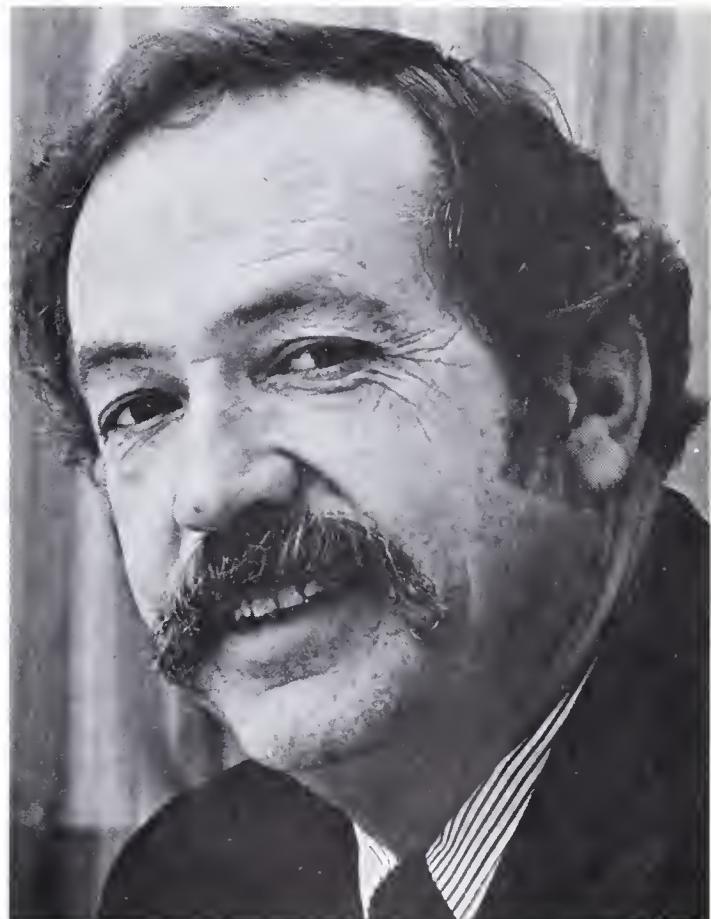
Funded by a \$75,000 grant from the federal Alcoholism, Drug Abuse and Mental Health Administration of HEW, the SPD Steering Committee met with over 100 providers and consumers of programs for alcoholism, drug abuse and mental health and addressed themselves to problems of integration in these fields as well as the following previously identified issues:

- Identify statewide needs and problems in alcoholism, drug abuse and mental health services.
- Identify resources to meet needs and barriers.
- Identify statewide service objectives and time frames.
- Identify priorities.
- Establish task forces and work plan.

The participants, divided into ten task forces, after two days of deliberation produced thoughtful and detailed recommendations. Information from the task force reports is being distilled into a policy document for Governor Hammond and myself to use for guidance in determining the best possible restructuring of program services and delivery.

The main themes expressed by the various task forces were:

- Coordination — if not complete integration of programs in alcoholism, drug abuse and mental health.
- Development of a unified, integrated human service system which would treat each person as a complete individual.
- Regionalization of all health services programs with uniform boundaries.
- More concern for how programs affect clients, rather than how programs operate administratively.
- Development and implementation of a statewide comprehensive health plan, including all levels of services and programs.



Francis S. L. Williamson

- Insure continuing consumer input to state authorities and strive for programs more directly tailored to fit individual communities thus giving greater benefits to the individual.

I feel the conference was most successful and as a result a meaningful policy document can now be developed. For instance, one task force determined that the increasing problems of alcoholism, drug abuse and mental health within Alaska relative to pipeline impact translated into massive needs. The report stated that these are not short term as there will be a permanent

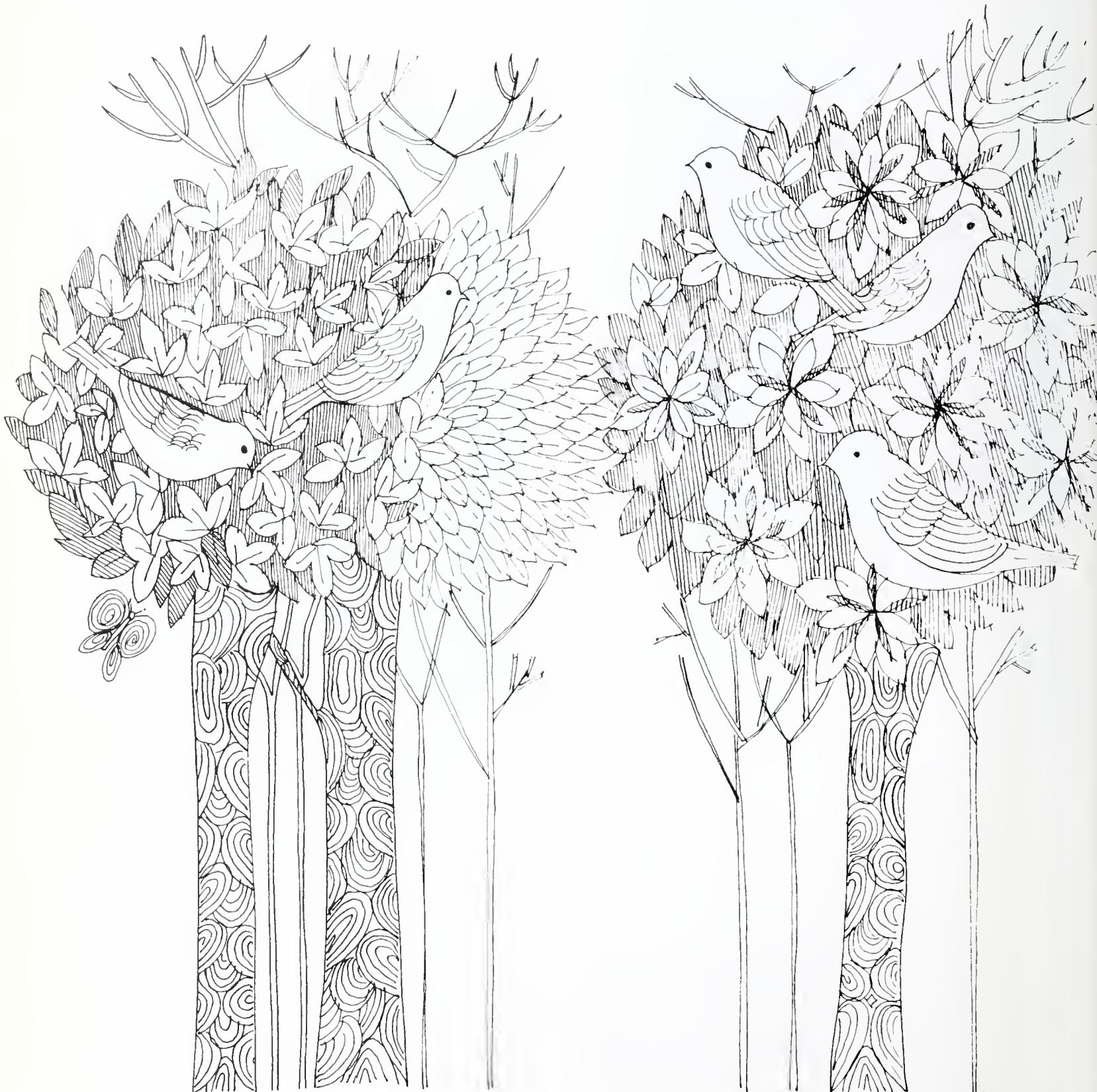
change in many life styles in Alaska. Their recommendations included giving direct treatment services first priority over planning, program development and education; increasing accountability of those in charge of programs and avoiding duplicate services.

I am especially excited about this project as it affords the opportunity to look at new and innovative ways to deliver services that are effi-

cient and will give a greater span to services to more people in need.

If any of our readers would like more information concerning the SPD project, may I suggest they write directly to the State Coordinator, Ken Fallon, Pouch H, Juneau, Alaska.

My compliments to the SPD Steering Committee and all the providers and consumers who contributed their time and energies to making a successful policy document possible.



NORTHERN HIGHLIGHTS - 18

SELECTED ABSTRACTS ON MEDICINE AND PUBLIC HEALTH IN THE NORTH

Viral Diseases:

Gravelle, C. R.; Noble, G. R.; Feltz, E. T.; Saslow, A. R.; Clark, P. S.; Chin, T.D.Y.

An epidemic of Echo virus type 30 meningitis in an Arctic community. *Amer. J. Epidemiol.* 99: 368-374, 1974.

This paper describes an outbreak of aseptic meningitis due to echo virus type 30 occurring in Bethel, Alaska, during June 1969. The authors were with the Ecological Investigations Program of the Center for Disease Control, with the exception of Mr. Feltz, who was with the Arctic Health Research Center at the time of the study.

A total of 97 cases of illness were studied, including 40 classified clinically as aseptic meningitis and 57 as minor febrile illness. The outbreak began early in May, reached a peak in mid-June and was over by mid-July. Cases were identified through hospital records, interviews with 277 persons from 63 randomly selected households in Bethel (9% of community) and through visits to 25 households (163 persons) as part of a continuing study of respiratory disease in the community. Throat and stool samples were collected for virus isolation and serological studies were performed on paired serum specimens.

The illness was characterized by vomiting (94% of cases), headache (90%), and fever (40%). None had photophobia. Kernig's or Brudzinski's sign was noted in only 8 patients. Forty patients had lumbar punctures, with CSF cell counts ranging between 1 and 272, predominantly lymphocytes. Thirteen patients were hospitalized and there were no deaths.

Some 24 cases of illness identified through the random survey, yielding an attack rate of 8.7% for the community. The highest attack rate (25%) was in the 5-9 year group and those above 14 years had the lowest rates.

Echovirus type 30 was found in the throat samples of 50% of 54 ill persons and in 29% of 31 apparently well family contacts. Virus recovery from stool samples, however, was not significantly different in sick or well persons. The virus was found in the spinal fluid of 5 patients with meningitis and in 2 with minor illness.

Serum antibody levels were below 1:8 in only 49% of the population tested before the epidemic. In this group, 58 persons (84%) became infected, 3 with aseptic meningitis and 17 with minor illness. These data suggested a ratio of clinical illness to subclinical infection of about 1:2.

California virus encephalitis. *Communicable Disease Bulletin*. Alaska Department of Health and Soc. Services: Jan. 27, 1975.

A case of California virus encephalitis was confirmed serologically in a 4-year-old Anchorage girl. This is the first human case reported from Alaska.

McLean, D. M.; Bergman, S.K.A.; Graham, E. A.; Greenfield, G. P.; Olden, J. A.; Patterson, R. D.

California encephalitis virus prevalence in Yukon mosquitoes during 1973. *Can. J. Public Health* 65: 23-28, 1974.

This study reports the isolation of the snowshoe hare subtype of California encephalitis virus in the Yukon Territory from 2 additional species of mosquito and extends the distribution of antibody prevalence among small mammals. The authors are with the Division of Medical Microbiology, University of British Columbia, Vancouver.

Unengorged female mosquitoes were collected at seven locations throughout the Yukon Territory between May and July 1973. In addition blood samples were obtained from small wild lagomorphs and rodents.

CEV strains identical with the Marsh Lake 23 strain were isolated from 4 of the 132 pools comprising 6278 mosquitoes. Species infected included *Culiseta inornata*, *Aedes cinereus*, *A. canadensis*, and *A. communis*. Near Williams Lake, B. C., CEV was isolated from a small pool of *A. fitchii* mosquitoes. It was demonstrated that CEV was able to multiply in all four species from the Yukon Territory.

Sera from 1,299 mammals caught at 9 Yukon locations between May and July 1973 were examined for CEV antibodies. These were found in 48% of snowshoe hares (*Lepus americanus*), 10% of ground squirrels (*Citellus undulatus*), and 3% of red squirrels (*Tamiasciurus hudsonicus*). Marsh Lake and Haines Junction showed a high infectivity rate.

A natural cycle of CE virus infection has been demonstrated throughout the Yukon, but to date no human cases have been confirmed.

Iversen, J. O.; Wagner, R. J.; deJong, C.; McLintock, J.

California encephalitis virus in Saskatchewan: isolation from boreal *Aedes* mosquitoes. *Can. J. Public Health* 64: 590-594, 1973.

This study was undertaken to elucidate further the distribution of CEV in northern regions. The authors are with the Western College of Veterinary Medicine, University of Saskatchewan, and the Canada Department of Agriculture, Saskatoon.

Mosquitoes were collected from three mixed-wood forest sites in north-central Saskatchewan during the summer of 1972. *Aedes* species accounted for 99% of the insects collected. Viruses of the California encephalitis group were identified from six of 215 pools of mosquitoes. Three isolates were of the snowshoe hare subtype and three were of the Jamestown Canyon subtype.

These findings support the hypothesis of widespread natural occurrence of CE virus in northern Canada. Woodland *Aedes* species usually emerge in large numbers by early June and are a pest for man throughout the summer season. The Jamestown Canyon subtype has been implicated in human illness, though not yet in Canada.

Calisher, C. H.; Lindsey, H. S.; Ritter, D. G.; Sommerman, K. M.

Northway virus: a new Bunyamwera group arbovirus from Alaska. *Canad. J. Microbiology* 20: 219-223, 1974.

This highly technical paper reports the isolation of a new strain of arbovirus of the Bunyamwera group in Alaska. The authors are with the Center for Disease Control and the Arctic Health Research Laboratory.

Five viruses of the Bunyamwera group have previously been described from North America, but only one of these (Cache Valley virus) from the northern part. Using a serum dilution plaque reduction N test in Vero cell cultures, the authors were able to demonstrate cross-reactivities between the five North American Bunyamwera viruses and a new one isolated from Alaska.

Specimens were collected at Northway, Ester and Dome Spur, Alaska, all within the boreal forest zone. Viruses were isolated from Aedes and Culiseta mosquitoes and from sentinel rabbits during summers of 1970 and 1971. When the virus designated 0234 isolated from Northway was cross-tested with the five prototypes from Alaska by the plaque reduction method, the antigenic differences between them and the other North American viruses were demonstrated. The new virus was tentatively named Northway virus and was thought to be identical with or very similar to the other Alaskan isolates of the Bunyamwera group.

Edelen, J. S.; Bender, T. R.; Chin, T.D.Y.

Encephalopathy and pericarditis during an outbreak of influenza. *Amer. J. Epidemiol.* 100: 79-84, 1974.

This paper reports the association of encephalopathy and pericarditis with an outbreak of influenza A/England/42/72 in Fairbanks in January 1973. The authors are or were with the Center for Disease Control.

A total of 18 patients were found to have signs and symptoms of pericarditis, encephalopathy, or both during the epidemic. Cases were identified by retrospective review of inpatient records at the local hospital, supplemented by personal interviews with the patients.

The ages of patients ranged from 20 to 48 years, with a median of 30. Eleven were males. No common denominator was apparent, though there was some clustering by occupation. All 18 had an influenza-like illness. Seventeen had chest pain, with 11 patients describing it as severe. Ten showed dyspnea, ten palpitations, and seven recalled pleuritic pain. Of the seventeen with evidence of encephalopathy, 16 had drowsiness or somnolence, 15 had dizziness, and 13 had impaired recent memory, depressive ideation or hostility. CNS symptoms varied from 2 to 90 days in duration.

Eight of 12 patients with acute and convalescent serums or throat swabs taken showed evidence of influenza infection as evidenced by virus isolation (2), a fourfold rise in antibody titer (4), or both (2). The overall incidence rate for those with pericarditis or encephalopathy and documented influenza was 5.4/10,000 population.

Although the findings do not prove beyond doubt the relationship of influenza with encephalopathy and pericarditis, there was a strong temporal association. Future influenza epidemics should be carefully monitored for these findings in a prospective manner.

Skinhøj, P.; McNair, A.; Andersen, S. T.;

Hepatitis and hepatitis B-antigen in Greenland. *Amer. J. Epidemiol.* 99: 50-57, 1974.

This paper describes the distribution of HB-Ag carriers in relation to the occurrence of viral hepatitis in Greenland. The principal author is with the Department of Clinical Chemistry, Bispebjerg Hospital, Copenhagen.

A total of 2904 serum samples were collected from apparently well Native Greenlanders for various studies between 1965 and 1970 and 156 other samples were obtained from acute phase patients during an epidemic of hepatitis in 1970-1972.

HB-Ag was found in 7.1% of the apparently well Greenlanders. Prevalence was low in three southern towns (1.2%), increased gradually along the west coast (6.2%), and was highest on the east coast (12%). In areas of high prevalence, males had a significantly higher antigen carrier rate than females. The prevalence was maximal in the age group 20-30 and declined rapidly thereafter. Subtype D was found exclusively in east Greenland, subtype 4 on the northwest coast and a mixture elsewhere.

An inverse correlation was generally found between the prevalence of HB-Ag and the incidence of hepatitis. Antibody was detected most frequently in the towns where endemic hepatitis was common.

Serum samples from 156 acute-phase patients with epidemic hepatitis showed no significant difference (in the age group 10-29) in the prevalence of HB-Ag and antibody from the prevalence in the healthy population.

The prevalence of HB-Ag was found to vary by a factor of 10 times in various towns despite uniform genetic and climatic conditions. The HB-Ag carrier rate did, however, vary inversely with the socioeconomic and housing conditions. This prevalence is presumably determined by the extent of exposure in early childhood, due to poor sanitation.

Nearly all adult Greenlanders were found to be immune to hepatitis A during recent large epidemics.

—Robert Fortune, M.D.

ALASKA MEDICINE

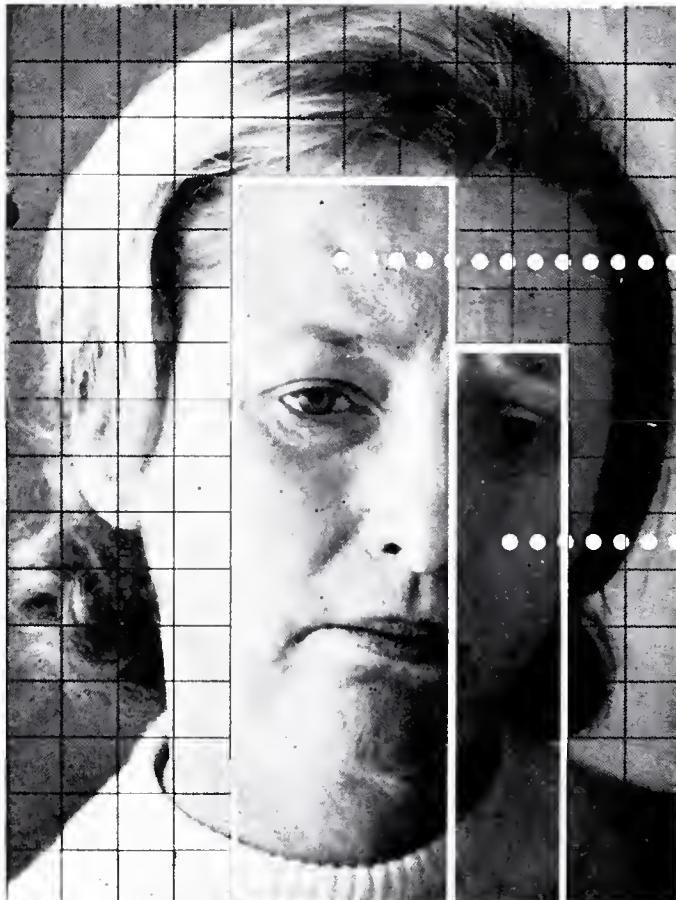


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ORDER AND EQUITY IN SETTLEMENT OF MEDICAL MALPRACTICE SUITS

Rodman Wilson, M.D.

Fundamental in the surge of medical malpractice lawsuits is consumerism — a demand for perfect medical care with full accountability and responsibility if care is faulty. High expectations have been fostered by wide publicity about the enormous advances in medical science and by the fictionalization of these advances by communication media, particularly in television medical shows such as Dr. Marcus Welby.

A desire for perfect care is, of course, not unreasonable. Everyone wants perfect carpet laying, absolutely correct tax advice, entirely satisfactory dentistry. It is only unreasonable to expect that medical care will always have successful outcome, for disease is not that predictable or that controllable. After all, we all eventually die of something no matter how skillful the care. But high expectations and high disappointment when disease has not healed are leading patients increasingly to blame the doctor or the hospital for the unfavorable result. No longer do people passively or stoically accept their lot as bad luck, fate, or the will of God. They must find a scapegoat, not just to escape a portion of blame themselves — for there may be a contribution to the illness or injury by the person — but for money.

It is true, however, that medical care does frequently injure persons. A study by Guilmet, Inc. for the Department of Health, Education, and Welfare found that 1,780 of 23,750 or 7.5% of patients discharged from certain hospitals sampled in 1972 had been injured by the care they received — some seriously or even fatally. In 517 or 2.2% of these cases the injury was due

to negligence on the part of doctors or other members of the health team. In only a few of these cases were suits filed.

When suits are filed they usually ask reparations not only for medical costs but also for loss of income and for general damages such as for loss of consortium and for pain and suffering. Amounts asked, and increasingly granted by sympathetic courts, are hundreds of thousands or occasionally millions of dollars.

Juries appear to be ruled more by sympathy than by reason. The question of causation — differentiating between the random course of disease with naturally varying outcomes and on the other hand deviation to an unfavorable direction by medical intervention is so intricate for non-medical persons that sharp attention to causation is often not given. Negligence is presumed merely because the outcome was bad. Sharp trial attorneys know how to evade these tough questions of true cause by focusing on the pitiable conditions of his client.

Physicians and hospitals have traditionally bought liability insurance to protect their assets against seizure in such suits. In past years policies were relatively cheap because suits were rare and settlements or awards, if any, small. Now the social climate is for full and generous reparation. Policies were not designed for this. It is increasingly obvious that physicians and hospitals, one of which in New York recently paid 1.7 million dollars for a 1-year liability policy, are simply not rich enough to indemnify patients to the extent which juries now expect them to.

Large portions of the awards, after expenses, of course go to the successful attorney. Large amounts of premium dollars also go to defense attorneys. The portion of premium dollar paid

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to the patient varies depending upon the study from only 16-38%. The portion going for case investigation and other defense costs is 46%. Contingency fees by successful plaintiff's lawyers vary from 30-50% or more. Because expenses of investigating and prosecuting by plaintiff's attorneys are so high, it is said that many trial attorneys now will not take a case of alleged malpractice unless the chance expectation of winning at least \$50,000 is high. This of course makes it difficult for persons with mild or moderate injuries caused by negligence to receive any reparation and leads him dishonestly and with the seeming connivance of his attorney to exaggerate his loss, to delay his recovery, and to magnify his suffering.

Insurance companies on their part want to get out of the business. They may have made large profits in the past — no figures are publicly available — but certain it is that they are no longer profiting hugely. Many have dropped out of underwriting. Two have become bankrupt. There are only about 6 major companies writing malpractice insurance in the United States — St. Paul, Signal Imperial, Chubb, Travelers, Hartford, and Aetna.

Those continuing to write insurance are asking enormous premiums — 10, 20, 50,000 dollars per year. There is understandable limited ability even in a frequently high income profession such as medicine to pay such amounts — in advance annually — right off the top. And there is a limited ability to pass these costs on to patients, especially in a time of national economic slump. Fees are pretty much fixed in any event by Medicare and Medicaid "allowables," and while one can over the course of a year or two upgrade his "profile" and thus receive more from federal programs, the latent period is long and payoff uncertain. Furthermore, it is difficult to justify and as a practical matter hard to administer a higher charge to non-Medicare-Medicaid patients to make up for the higher malpractice insurance premiums, to say nothing about the unfairness of the matter.

All of this then has boiled up into a scalding brew which erodes not just physicians' incomes and hospitals' budgets but which is threatening to denature the American medical care system itself. Patients, planners, consumer advocates, physicians, hospital administrators, and even some attorneys are alarmed that the medical care system — or "non-system" as health planners like to call it — is crumbling. Groups of doctors such as anesthesiologists (first in the nation in Anchorage briefly in January 1975, incidentally) are refusing to work except in emergencies (the latter truly generous as exposure to malpractice suits is much higher in emergency than in scheduled work).

Older physicians are retiring early. Young physicians are wondering how to start, faced with say a \$20,000 insurance bill! Perhaps students are even becoming disenchanted with medicine as a career. The bulk of physicians in mid-career are modifying or distorting their practices to lessen their exposure and are seeking secret ways to shelter their assets. Timid medicine is detrimental to patients. They want doctors to use their full intelligence and full skill to get them well. But imagination and courage reap both brilliant cures and excess medical injury. Physicians cannot risk the latter in the present crunch.

To repeat, the public is scared. Scared that medical care will not be available. And availability is more important to the public than any other factor — more important than cost; much more important than the right to sue for the moon if medical care did not come out right.

In this unhappy situation, all agree that interim measures — probably legislative — must be taken to stabilize the scene so that orderly practice of medicine in offices, clinics, and hospitals can proceed.

A multiplicity of measures have been introduced — over 160 bills in State Legislatures — which would curb the problem by such mechanisms as joint underwriting associations (pooled risk) with exclusive rights to underwrite medical liability insurance within a state, limits on awards, shorter statutes of limitations, use of collateral resources to avoid double payments, outlawing *res ipsa loquitur* (Alaska has done so), outlawing *ad damnum*, tightening up licensing board penalties against errant doctors, setting up arbitration panels or reparation boards, etc. Indiana and Idaho are the only states which so far have passed major measures limiting recovery, to \$150,000 in Idaho and to \$500,000 in Indiana with only \$100,000 from the provider and up to \$400,000 more from a provider funded medical compensation fund.

The constitutionality of limiting recovery is seriously questioned by some knowledgeable persons who predict confidently that the Idaho and Indiana statutes will be overthrown. Others equally knowledgeable argue that the constitutional guarantee to equal treatment under the law can mean equal treatment of all members of a class, such as work camp, airline death, e.g., physicians. They further cite other situations in which recoveries are limited. Many other states are about to legislate in these areas. If these several solutions cool the cauldron sufficiently to restore orderly medical practice — practice in which physicians do not fear their patients — well and good. States then one by one will plagiarize the best in another state or otherwise improve their own statutes.

There is general agreement that federal legislation in this area is less desirable than state by state action, although several bills have been introduced in Congress which would attempt to rectify matters. Federal reluctance stems largely from tradition and precedents which allow states to regulate insurance and to set rules of court. If states do not find satisfactory remedies, it is inevitable in the minds of all, that Congress will stabilize the matter in one manner or another. It will be almost irresistible not to incorporate into next year's definitive national health insurance bill a mechanism for managing malpractice claims.

Ultimately the best correction will not come with any legislation. It should come from doctors and hospitals themselves to do what indeed patients want the most: that is, making medical care as perfect as is humanly possible — not always successful, for, again, we all die — but as skillful and as careful as man can manage, so that progressively, not 1 in 40 in injured by medical care but 1 in 80, then 1 in 120 and so forth to an irreducible minimum number of medical injuries. Then the problem to all intents and purposes will vanish. The challenge ultimately thus is not to lawyers, or legislators, or insurance companies but to physicians, nurses, and hospitals themselves.

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CORNEAL TRANSPLANTATION IN ALASKA NATIVES

Ronald E. Smith, M.D.

Donald W. Dippe, M.D.

Stephen D. Miller, M.D.

The incidence of phlyctenular keratoconjunctivitis (PKC, "Alaska Red Eye") in Alaska has dramatically decreased with control of tuberculosis in the Alaska Native and white population.^{1, 2} A large backlog still exists, however, of adult Natives who have poor vision from corneal scars resulting from recurrent bouts of PKC during their childhood. Corneal transplantation (penetrating keratoplasty) is the only hope for improved vision in many of these patients.

The following report documents the experience at the Alaska Native Medical Center (ANMC) in corneal transplantation for PKC corneal scarring. The role of all physicians and paramedical personnel in a successful corneal transplant program and the need for improved Eye Bank facilities in Alaska will be discussed.

RESULTS OF CORNEAL TRANSPLANTATION AT ANMC

Forty-five keratoplasties have been performed at ANMC from 1961 through 1974, over 50% (24) of them in the past two years. Keratoplasties done for phlyctenular scarring were selected from this group according to the following criteria: 1) Diagnosis of PKC scarring based on history and clinical examination; 2) Absence of pre-operative complications of PKC such as glaucoma, healed perforation, etc.; 3) No previous intraocular surgery such as cataract extraction, keratoplasty, etc.; 4) Positive tuberculin skin test; 5) Negative screening test for syphilis (luetic corneal disease may mimic PKC); and 6) Minimum follow-up of six months. Eighteen of our corneal transplants (40%) met the above criteria and were included in this study. The age

of the patients at the time of surgery ranged from 14 to 77 years with an average of 42.5 years, and a median of 39.5 years. Six of the eighteen study transplants were performed in the last two years (See Table I).

Table I Dates of Corneal Transplants

Year	Clear Grafts	Failed Grafts
1974	3	0
1973	3	0
1972	1	0
1971	1	0
1970	3	1
1969	1	1
1968	0	0
1967	1	0
1966	0	1

1961	1	1

The irregularities of the cornea induced by PKC scarring can sometimes be optically corrected with a contact lens, giving marked improvement in vision even though ordinary glasses are of no benefit. Therefore, patients whose vision could be improved with a contact lens were not considered candidates for surgery unless they were unable to wear such a lens. In all transplanted patients, the visual acuity was reduced in both eyes and surgery was performed only on the worse eye.

Follow-up after surgery ranged from 7 months to 157 months with an average of 46 months. Fourteen of the eighteen patients (79%) had clear grafts at the time of their last examination for this study. Of the patients with clear grafts, 12 of 14 (86%) had improvement of

From the Department of Ophthalmology, PHS Alaska Native Medical Center, Box 7-741, Anchorage, Alaska 99510

vision at least two lines on the Snellen chart (See Table II). The two remaining patients had dense cataracts accounting for the lack of improvement in vision.

Table II Post-Operative Change in Vision (Snellen Chart)

	Patients with clear grafts	Patients with failed grafts
Worse	1 (cataract)	2
No Change	1 (cataract)	1
Improved 1 line	0	1
Improved 2 to 4 lines	7	0
Improved 5 or more	5	0

The four graft failures in this series included one failure due to late glaucoma with secondary clouding of a previously successful graft, one homograft rejection, and two failures due to either technical problems at the time of surgery or poor donor material. Homograft rejections are not a major cause of graft failure in corneal transplantation of relatively avascular, scarred corneas such as those found in PKC. When recognized early, the reaction is usually reversible with topical and systemic corticosteroids. Technical problems are being solved. Table III illustrates the improvement in results with introduction of finer suture material (10-0 monofilament nylon) and the operating microscope. Over 90% of patients in our series maintained clear grafts with these newer techniques. Thus with close follow-up and recent technical improvement in corneal surgery, the remaining significant problem is the lack of readily available and satisfactory donor material.

Table III Graft Clarity and Suture Material

Suture	No. Cases	No. Clear	% Clear
10-0 nylon	12	11	92
8-0 silk	2	1	50
7-0 silk	3	2	67
6-0 silk	1	0	0
Totals	18	14	79

EYE BANKS AND ALASKA

By 1959, Dr. Milo Fritz had pioneered the development of the first Eye Bank in Alaska.³ The functioning of that Eye Bank and its suc-

sors has been limited by a public generally uninformed about the importance of its role as a source for donor eyes. Today most metropolitan areas have well-organized, professionally operated Eye Banks with trained personnel on call 24 hours a day to remove, store and ship donor eyes. Alaska lacks such a program.

With the increasing success of corneal transplantation surgery in recent years, the need for such an active Eye Bank in Alaska has become acute. The long waiting time now necessary to obtain satisfactory donor eyes from "outside" is no longer acceptable either to Alaskan ophthalmologists or to patients.

Fortunately, one of Anchorage's Lions Clubs, with the advice and encouragement of Anchorage area ophthalmologists, is presently revitalizing and reorganizing the Anchorage Lions Eye Bank. With appropriate education of the public, this group hopes not only to provide Alaskan ophthalmologists with enough fresh corneas to meet their needs, but also to be able to ship donor eyes from Alaska to the lower 48 states. Information concerning the function of this Lions Eye Bank may be obtained by calling 277-0818 in Anchorage.

The all-important communications link between the Lions Eye Bank and the "outside" has already been established. Anchorage area "ham" radio operators are in frequent contact with the nationwide Eye Network of amateur radio operators. Information concerning available donor eyes and the needs of ophthalmologists in Alaska and throughout the United States is disseminated daily via this highly organized network of volunteers.

REMOVAL, PRESERVATION AND SHIPPING OF DONOR EYES

Without fresh donor corneas the efforts of the corneal surgeon are doomed to failure. Ideally, donor eyes should be enucleated within 6-8 hours after death, although longer periods are acceptable if the body has been refrigerated. It is important to emphasize that no cosmetic deformity results from post-mortem enucleation of eyes. The eyelids and lashes are not touched and the socket is filled with gauze. With the eyelids closed, it is impossible to detect that the eyes have been removed.

Most Eye Banks process whole eyes rather than just the corneal button needed for transplantation. After enucleation, the donor eyes are irrigated with antibiotic solution and secured in small sterile glass jars for shipment in especially designed containers which are insulated and kept at 4-10° C with ice (figure 1). The disadvantage of using whole, refrigerated eyes is the time involved in transporting such tissue from "out-

side" Eye Banks to Alaskan ophthalmologists. Refrigerated donor tissue should be used within 24 hours after death to obtain optimal results. Although airline traffic to Alaska is increasing, it is rare for donor material from "outside" to reach Alaskan eye surgeons within 24 hours of death. Often the donor cornea is used at the outside limits of its acceptability, thereby decreasing the chances for a successful transplant. This problem could obviously be solved by the use of locally donated eyes. As mentioned earlier, progress toward this goal is being made in Anchorage.



Figure 1: Container for shipping whole donor eyes in a cooled condition.

Very recently a new technique for processing donor eyes has been devised.⁴ The eyes are enucleated within 4-6 hours of death and the whole cornea with a thin rim of sclera is excised (figure 2). This corneal-scleral preparation is immersed in a commercially available tissue culture medium and shipped in vials in the usual insulated and cooled container. The advantage of this technique is that the cornea remains in excellent condition for 4-7 days instead of 24 hours, thus allowing transport to distant areas



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such as Alaska. Furthermore, the surgery itself becomes a more elective procedure, performed under ideal operating room conditions during the day. We have used several of these preparations at ANMC and find the results to be comparable to our previous experience with whole fresh donor eyes.

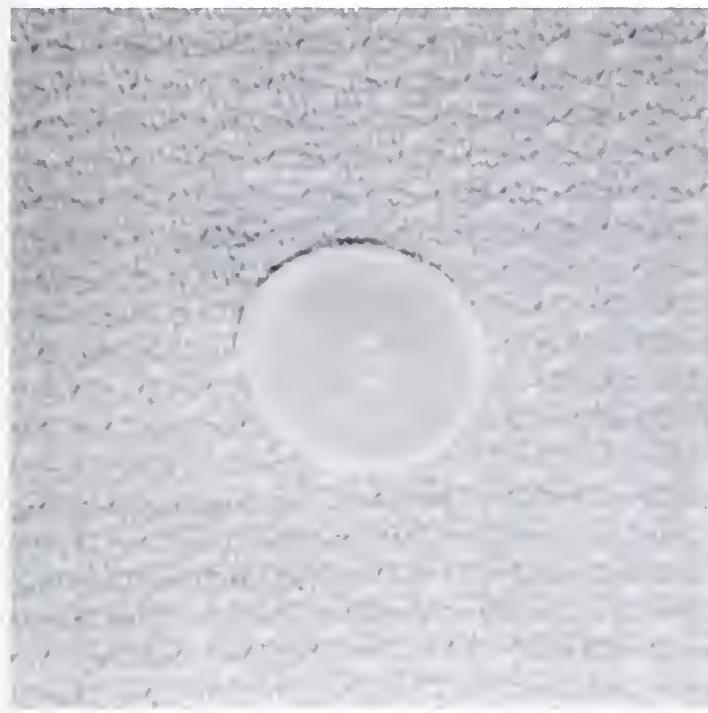


Figure 2: Corneal-scleral donor preparation, usually shipped in sterile tissue culture media.

WHO IS A GOOD DONOR?

It is generally true that the younger the donor, the better the tissue. However, most ophthalmic surgeons feel that corneas from persons age 1 to 65 are acceptable. Infant corneas are too soft for adequate suturing, and elderly corneas are prone to degenerative disorders which make successful transplantation unlikely.

Patients with viral hepatitis, or any form of jaundice in which it cannot be ruled out, are not acceptable donors since the virus may be transmitted via the corneal graft. Possible viral transmission of leukemia makes leukemic patients also unsuitable as donors. However, persons with other forms of malignancy are generally considered satisfactory donors. Disseminated infections are a relative contraindication to the use of a donor cornea depending on the nature of the underlying disease. With these limited exceptions almost all persons are potentially good donors.

SUMMARY

Since the time of the first corneal transplant in Alaska by Dr. Milo Fritz in 1958, great strides have been made in the field of corneal transplantation surgery. The introduction of fine 10-0 nylon sutures, the operating microscope, microsurgical instrumentation, and recently developed corneal preservation techniques has improved the prognosis in transplantation for all types of corneal disease, including PKC scarring. Our own experience at ANMC suggests that we should expect 80-90% of transplants performed for PKC to remain clear.

The major obstacle to an improved corneal transplantation program in Alaska is no longer the lack of suitable facilities, instrumentation, or trained personnel but rather the lack of fresh donor corneas. We would like to echo the appeal made by Dr. Fritz in this same journal 15 years ago³ when he asked that all physicians assist in the education of their patients and the general public in the need for an active Eye Bank supported by a large population of informed prospective donors. Only through the concerted efforts of physicians, paramedical personnel, the Lions Club and other groups interested in sight conservation will the general public be enlightened to its crucial role in the establishment of an Eye Bank able to meet the needs of Alaska. ●

ACKNOWLEDGMENT

The authors wish to thank Rose Duquette, JoAnne Fraser, Peggy Hinckey, and Becky Gallen who assisted in this study.

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AUTOTRANSFUSION OF MAJOR HEMOTHORAX IN A SIMPLE COUNTRY HOSPITAL

A. von Hippel, M.D.

Significant blood loss into the chest is common, and adequate facilities for control of hemorrhage is not always available. A patient's own warm, unclotted blood is ideal replacement for major blood loss, pending cessation or surgical control of bleeding. Blood from hemothorax has been reinfused by various methods in hundreds of patients. At least one autotransfusion filtration-pump system (Bentley) is currently marketed.

A simpler autotransfusion set-up for immediate use in bush or general hospital is reported here. Using common inexpensive equipment, three patients have had rapid, successful autotransfusion of major hemothorax with excellent hemodynamic stabilization. The basic idea is simply to disconnect the chest bottle from the chest tube when full of blood, and hang it as an IV bottle for immediate reinfusion.

MATERIALS

1. Materials for inserting chest tube.
2. Argyle chest tube, 28 or 32 F. (Aloe)
3. Two Bentley PDS-100 Pleural Drainage Bottles. (Bentley Labs)
4. Sterile saline for chest bottle "water seal" (200 cc each bottle). This is optional, for with much bleeding into chest, blood will drain easily and create its own "water seal."
5. Anticoagulant to add to chest bottle. Heparin in multidose vial (1000 U/cc), or CPD or ACD Solution, if preferred.
6. 1 cc syringe and needle for adding heparin to chest bottle.
7. No. 20 Argyle chest tube to insert into chest bottle air vent and connect to blood filter.

8. Multiple transfusion blood filter (optional).
9. Blood Pump Set. (McGaw Labs)
10. No. 14 or No. 16 IV needle or plastic cannula.

METHODS

Chest tube is inserted as indicated (sometimes through a conveniently located bullet hole, for example) and secured, taking care not to waste accumulated blood when first inserted. Chest drainage bottle is connected to chest tube. Heparin or other anticoagulant is added to chest bottle which is swirled occasionally to mix and prevent clotting. When chest bottle is nearly full (over 2 liters) it is replaced by empty bottle and full bottle is hung as IV. Blood is easily returned to patient's vein via blood filter and hand pump (2 liters in 10-20 minutes). (See Diagram)

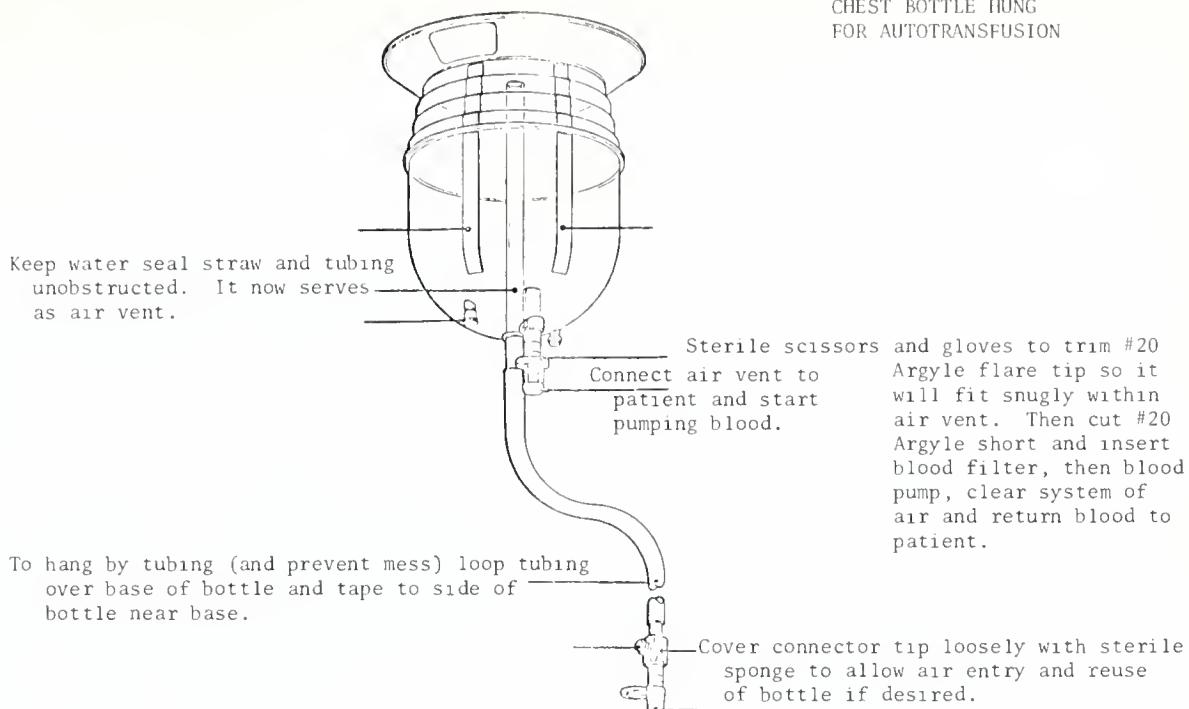
RESULTS

With this method we have autotransfused three patients with good hemodynamic results in all.

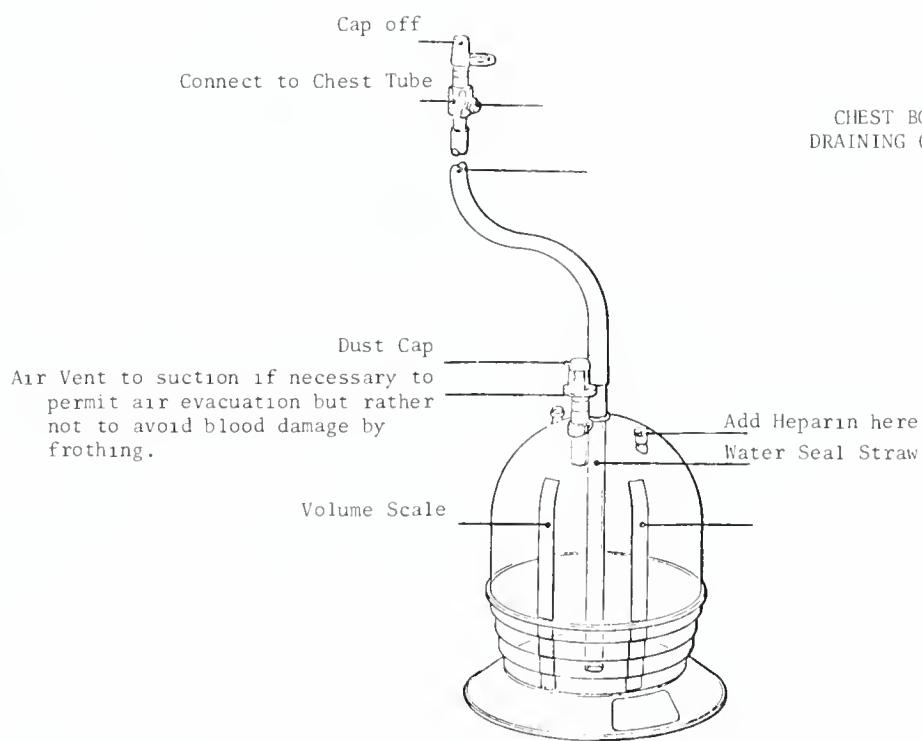
- (1) Massive chest and brain injury; autotransfused 1½ gallons blood over about one hour using 3 or 4 chest bottles. This provided stable circulation during evaluation and emergency room surgery for control of severe intrathoracic blood loss. Major source of blood was torn pulmonary artery. (Died later of pre-existing brain damage.)
- (2) Rib fractures with autotransfusion of 2-liter hemothorax; excellent stabilization of circulation with no further transfusions required and complete recovery.
- (3) Laceration of heart (partly transected left anterior descending coronary artery — with successful repair); 1¼-gallon autotransfusion during one-hour stabilization plus other transfusions (complete recovery without EKG changes).

Dr. von Hippel is a cardiovascular surgeon in private practice. Mailing address is 3300 Providence Drive, Anchorage, Alaska 99504.

CHEST BOTTLE HUNG
FOR AUTOTRANSFUSION



CHEST BOTTLE
DRAINING CHEST



DISCUSSION

Autotransfusion is limited only by the condition of blood obtained. If liquid and not grossly contaminated, it allows immediate return of warm, cross-matched blood to the critically injured patient. In these three cases, it prevented delay for cross-match, hypothermia from cold blood, and pulmonary and metabolic problems often associated with massive transfusion; and significantly reduced cost. No debris was seen in blood filters although it is probably wise to have a good filter in the line. Case No. 2 was injured about 12 hours prior to transportation to our facility so his intrapleural blood was probably free within the chest for a number of hours.

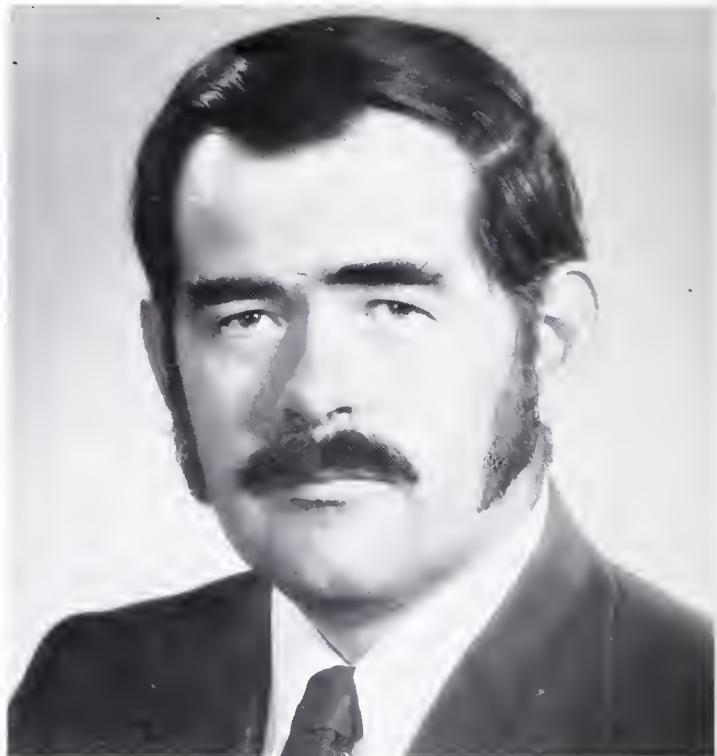
However, it was liquid and drained rapidly on chest tube insertion. When it remained "attractive" for several minutes it was quickly reinfused without anticoagulant while blood was still being typed. (I have since been told that reinfusion of "older" intrapleural blood can theoretically prove hazardous as it could "put active clotting and clot lysis factors into the blood stream in unphysiologic concentrations with possible catastrophic results," but it worked well in this case.) Case No. 3 was interesting in that we put in four pints of blood for every three we got back, due to continued intrathoracic clot formation during the one-hour wait for an open operating room.

PRESIDENT'S PAGE

The Association Meeting at Glacier Bay is over and certainly, from all aspects, can be considered a success. Our family went from there on a bicycling excursion and we have now returned refreshed and recharged. On the desk is a large list of official correspondence to be answered, resolutions to be distributed and all will be taken care of in good time, hopefully. The size of the list and the size of the job make consideration of resolution 75-23 pre-eminent, the subject of which is thanking the President of the Alaska State Medical Association. Though it may have had more, it only had one whereas: Whereas the President of the Alaska State Medical Association has spent much time and energy during the year on the affairs of the Association, now therefore be it resolved that the Alaska State Medical Association congratulates Dr. Rodman Wilson for conducting the affairs of the Association for the past year. So let us officially do that right now. It would certainly be appropriate, in addition, to continue thanking him for his efforts prior to last year just as it certainly wouldn't be inappropriate to thank him in advance for his efforts on the special Physicians Liability Committee, the chairmanship of which he has accepted. Certainly Rod's year of tenure was an excellent one with well-attended, enthusiastic, and interesting Council meetings in interesting places, continued financial health, active membership growth, upgrading of *Alaska Medicine*, etc. This certainly will be a hard act to follow.

Physician's Liability

Perhaps an update on the physician's liability situation would be in order here. As of this writing, of course, the Legislature has just returned home and Senate Bill 361, amended, has been passed but not yet signed or vetoed by the Governor. This bill sets up a joint underwriting association and of itself is not particularly noxious to the medical profession. It remains to be seen whether this bill will be capable of improving the situation to an appreciable extent. At the Glacier Bay Meeting, the Association anticipated that no malpractice bills would be passed by the Legislature and directed the President to ask the Governor for a special session. A liability bill was passed. Most of us feel that this will not answer the problem, but in good faith we must let the political process take its course.



Gary R. Hedges, M.D.

In the meantime, of course, more people will be losing their malpractice coverage. At that point, the individual physician will have to decide whether it is better to: 1) Practice without insurance, 2) Stop practice, or 3) Obtain coverage of a very limited nature through the State Association sponsored liability insurance.

The best feature of passage of this bill is that it gets others' fat in the fire along with ours. In the original Senate Bill 361, there was included a feature to "establish standards of practice for health care providers in the state and procedures to review the practice of insureds against whom claims have been made." This was certainly a noxious feature for the medical profession but we did not have to plead before committees and call in all our supporters to defeat that, since the insurance companies asked that it be removed. It would appear that with the passage of time more and more people are seeing the injustice of the present system with its inability to allow physicians to obtain coverage, the extreme high cost of coverage, claims made insurance, and a court system where the majority of the proceeds go to the lawyers. If we can continue in the posture that our No. 1 goal is to provide the best quality medical care to our patients and refrain from rash, impulsive acts, then our side will prevail.

BUSH MEDICINE COMMITTEE REPORT

The following standards are being published to serve as possible guidelines for the various organizations employing "mid-level" health personnel. The standards were prepared for the ASMA Bush Medicine Committee by Dr. Tom Nighswander. They were discussed and adopted as a committee report. We wish to thank Dr. Nighswander for his work in this area over the last several years and for his contribution in furthering the cause of quality control in rural programs.

JOSEPH D. BLOOM, M.D.
Chairman, Bush Medicine Committee ASMA

PRACTICE STANDARDS FOR MID-LEVEL HEALTH MANPOWER

Throughout the recent past health care in rural Alaska has received a welcomed and beneficial infusion of better trained and in some instances new categories of mid-level health manpower.

There are better trained Community Health Aides, expanded roles for Itinerant Public Health Nurses, and the introduction of Physician Assistants, family Nurse Practitioners, eye care specialists, mental health workers and others.

The impetus for this has been to improve medical services to Alaska's scattered and isolated rural population. The State Medical Society, through its Bush Medicine Committee, has encouraged increased training and supported the introduction of new varieties of health providers.

In reviewing this progress, we feel that additional improvements in care could be made by establishing a format for quality performance standards for programs utilizing mid-level practitioners.

We suggest that each program utilizing independent practitioners develop standards that would include but not be exclusive of the following areas:

1. Reliability and format of medical records
2. Medical standing orders — patient management protocols
3. Method and format of chart reviews
4. Frequency of on-site performance audit and consultation
5. Methods for continuing education

The following details the above format:

1. Reliability and Format of Medical Records

An accurate medical record is the most significant key to monitoring the quality of care and making improvements in that quality. The problem-oriented as opposed to the source-oriented medical record is particularly suitable for use by mid-level manpower. This

format calls for an assessment based on recorded subjective and objective data. Used properly, it insists that one only define a patient problem at his or her level of competence.

If the health provider is a reliable observer and records the data accurately, the resultant medical record provides an effective quality control mechanism and can be a useful tool for promoting higher standards of care.

2. Medical Standing Orders and Patient Management Protocols

Most but not all rural programs now incorporate standing orders for the routine acute outpatient problems. We feel these orders are an absolute necessity. Increasingly more chronic disease is being identified and is probably occurring more frequently due to the age of the rural population.

Chronic disease management protocols designed to monitor the patient with chronic problems should be developed. These protocols would require historical, physical, and laboratory data on a scheduled basis to identify the status of the disease, adequacy and side effects of therapy. For example, in a protocol for C.H.F., the appropriate data should be monitored for evidence of increased failure, digitalis toxicity, potassium depletion, etc.

3. Method and Format of Chart Reviews

All rural programs need a formalized method of chart reviews. Scheduled radio-telephone chart reviews using the problem-oriented format is a practical method of quality assurance. These should be done on a frequent and scheduled basis, and not left to the discretion of the practitioner.

In addition, it is necessary to do randomized or complete chart reviews on site. These audits should determine if the assessment of the patient's problem is substantiated by the recorded subjective and objective data. Further, these reviews would measure actual performance against the medical orders and management protocols.

4. Frequency of On-Site Performance Audit and Consultation

During field visits by supervisory personnel, it is necessary to see patients in concert to assess the reliability and completeness of the health provider's data. This could be most effectively accomplished when seeing problem patients. The consultant would obtain historical and physical data from the patient and compare this to that obtained by the independent provider. With the increased responsibility that is being given to mid-level practitioners, field visits for the above purposes should be done as frequently as is practical.

5. Methods for Continuing Education

Finally, this format requires scheduled in-service training to address deficiencies uncovered by the above mechanisms. In addition to classical hospital-based training, it is now possible using audio-visual materials to provide in-service training on site. This training can be most effective when it addresses specific areas of need that have been identified by the chart reviews and performance audits.

We would encourage at the beginning of the program year, a written schedule outlining when the above activities would occur at each practice site.



Bioequivalence

suspicion and discord. An oil survey crew was to come up from Montreal in the summer of 1972 and many thought that the explosives used for seismic studies could damage the walrus breeding grounds nearby. During these two unsettling years, the number of psychiatric referrals rapidly increased, though more recently they have declined again.

The author feels that in any community there are a certain number of people "at risk" for overt psychiatric disease and that community stresses may precipitate illness in these susceptibles.

Wintrob, R. M.; Diamen, S.

The impact of culture changes on Mistassini Cree youth. *Can. Psychiat. Assoc. J.* 19: 331-342, 1974.

This paper describes in some detail the adaptational pressures undergone by the Mistassini Cree, a band of about 1,000 Indians living south and east of James Bay, Quebec. The principal author is an Associate Professor of Psychiatry and Anthropology at the University of Connecticut Health Center, Farmington, Connecticut. The data for this study were drawn from interviews conducted at the Mistassini Post during the summer of 1972 and from a study of Cree youth carried out in 1967 and 1968.

Until very recent years the Mistassini Cree were a nomadic people who depended on hunting, trapping, and fishing 10 months of the year. This way of life is now rapidly disappearing, due to industrial developments, especially mining and hydroelectric projects and tourism in the area around James Bay.

Cree youth, as recently as 1967-68, usually aspired to become like their parents and to live in the traditional mode. Now, a mere five years later, most of the young people hope to train for salaried positions as electronics technicians, pilots, nurses, or secretaries. Many are uneasy about returning to the north, where life does not offer them the kinds of challenges they seek.

Also in the past few years, the Cree youth have become more conscious of their own identity as Indians and the heritage of their people. Some have become involved in the American Indian Movement, or especially in the Indians of Quebec Association, which is seeking to halt construction of a gigantic hydroelectric project near their traditional hunting grounds.

Alternative role models for Mistassini youth have emerged in recent years. The first of these is the cultural entrepreneur, who with his knowledge of both Indian or English or French culture, acts as a go-between in getting jobs for Crees or in dealing with the Indian agent. A second role is the acculturated Cree, who has completed advanced education and has adapted more or less successfully to the white urban society. The third role model is that of the peer group — the student who is undertaking advanced studies and thus becomes a force to retain younger siblings in school.

Perhaps the most serious consequence of these changes is the growing alienation between the traditional generation of parents and their offspring with a new set of values and aspirations.

Parkin, M.

Suicide and culture in Fairbanks. A comparison of three cultural groups in a small city of interior Alaska. *Psychiatry* 37: 60-67, 1974.

This study is concerned with suicidal behavior among Caucasians, Athabascan Indians, and Eskimos in

Fairbanks for the 12-year period 1960-71. The work reported was sponsored jointly by the National Institute of Mental Health and the Arctic Health Research Center. The author is now with the Suicide Prevention and Crisis Service of Erie County, N. Y.

The population of Fairbanks was changing rapidly during the years under study. As part of an overall growth rate of 11% between 1960 and 1970, the Native population increased by 112% during the period. Many of the population are migrants from other States or from other communities within Alaska.

In the 12-year period there were 224 suicidal behaviors in police files, including 21 suicides and 203 attempted suicides. Although in absolute numbers Caucasians made up by far the largest percentage of victims, the rates for Natives, especially Eskimos, were much higher. Though Natives made up only 6.2% of the population in 1970, Native women accounted for 38% of female suicide attempts and Native men for 18% of male attempts.

In general females of all races tended to choose a less lethal means of suicide compared with men. Males generally used guns or cutting instruments and were less likely to call for help. They were consequently more often successful. Females more often used drug overdoses. Alcohol was identified as associated with the suicidal act in only 13% of Caucasian cases, but was seen in 43% of Native women's act.

In the Caucasian population in Fairbanks, suicidal behavior is thought to be related to factors such as (1) a high risk group of susceptibles who have migrated to Alaska, (2) employment, travel, and isolation factors leading to family discord, and (3) the syndrome known as "cabin fever."

In the Native population, problems of acculturation, limited job skills and job opportunities, and prejudice are thought by the author to be contributory to the high incidence of suicidal behavior. It was further shown that Natives from predominately Native towns such as Bethel, Kotzebue, or Nome tended to be at greatest risk for suicide, followed by those from villages and finally those from other urban settings.

Finally, the author feels that Eskimos are more vulnerable to suicidal behavior than Athabascan Indians, perhaps due to differences in child-rearing patterns, which seem to make the Indians less needful of an emotionally supportive environment.

Jilek-Aall, L.

Psychosocial aspects of drinking among Coast Salish Indians. *Can. Psychiatr. Assoc. J.* 19: 357-361, 1974.

This paper describes the author's experiences over seven years with drinking problems of the Coast Salish Indians of the Fraser Valley, British Columbia. She is now associated with the Mental Health Clinic at Chilliwack, B. C.

Prompted by disappointment with the conventional western methods of psychiatric treatment, the author was moved to explore in greater depth the psychosocial determinants of alcohol abuse in this population.

Drinking simply to have fun at popular festivities is a widespread phenomenon, especially among those engaged in hard physical labor occupations. Most of these remain abstinent during working days. Another pattern is that of "potlatch" drinking, where participants may remain intoxicated for days, often on home-brew or whiskey. Some of the more traditional Salish may drink to gain spiritual power, especially when they are made to feel totally powerless in their dealings with white society. Others drink to emulate the white man, as

a means of gaining or demonstrating their status and freedom. On the other hand there are those who drink excessively to spite the white man, so that their loss of inhibitions will allow them to stand up to them unafraid.

The most serious drinking pattern, however, and the one which leads to chronic alcoholism and associated psychiatric problems, is that which is, in fact, escape from reality. This type is seen among those who have lost their self-respect and all hope of a better future.

The author is convinced that nearly all destructive drinking behavior among the Coast Salish can be attributed in some way to the deeply felt relationship of mistrust or hostility Indians feel with respect to the whites. The most successful therapeutic method has generally been Indian A.A. groups, which give the Indians an opportunity to ventilate openly their feelings of bitterness, hatred, and inferiority. Such an experience helps them to identify and foster special values within their own cultural tradition which can help to enhance their self-respect.

—Robert Fortune, M.D.

The complete articles which have been abstracted in Northern Highlights, Numbers 1-19, are available for reference at the Alaska Health Sciences Information Center. ed.

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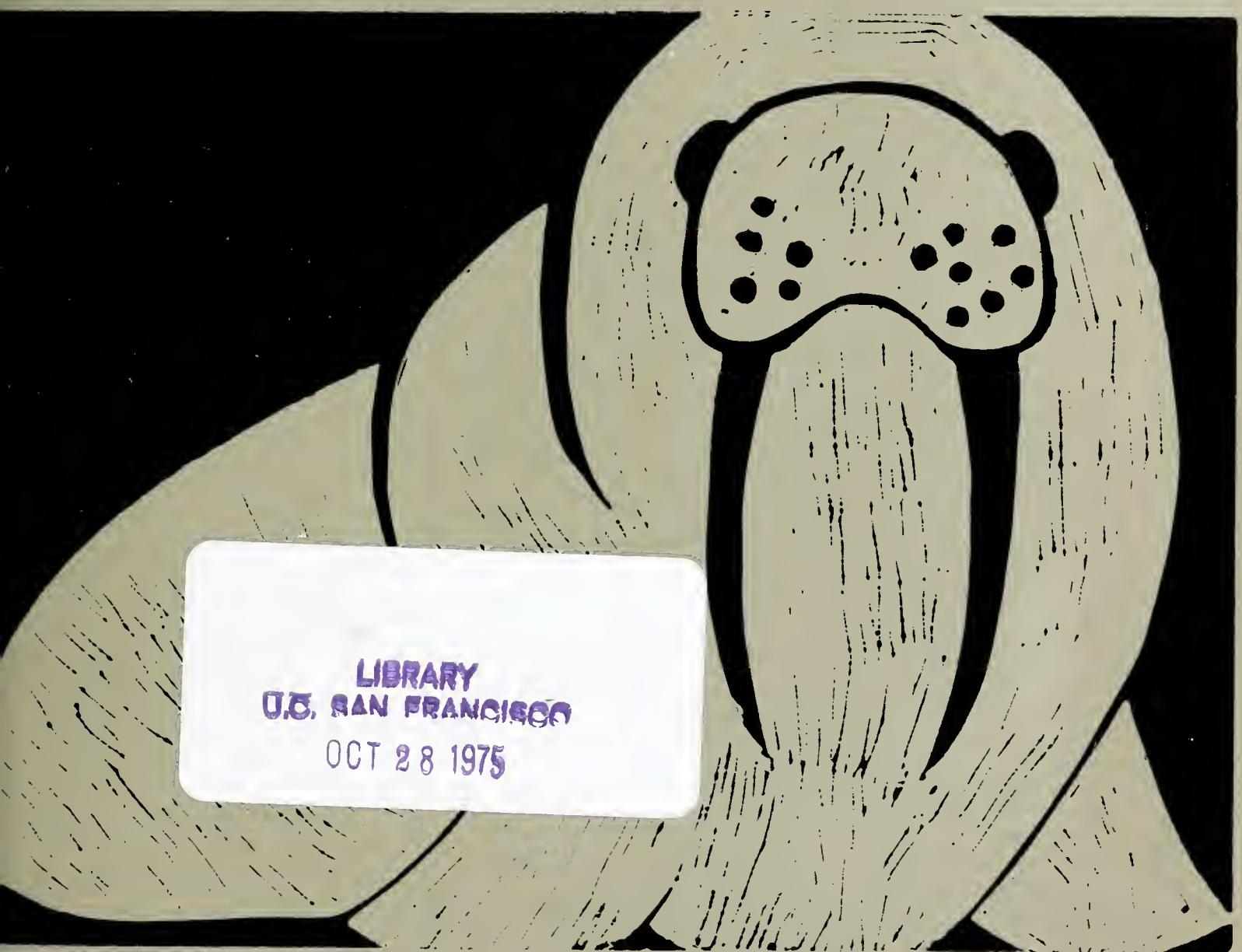
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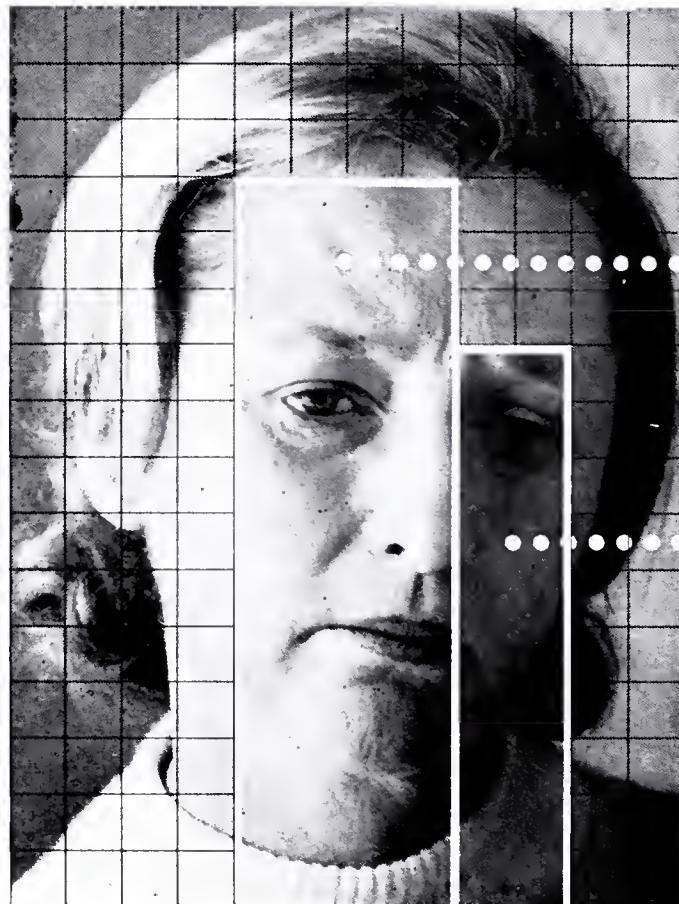
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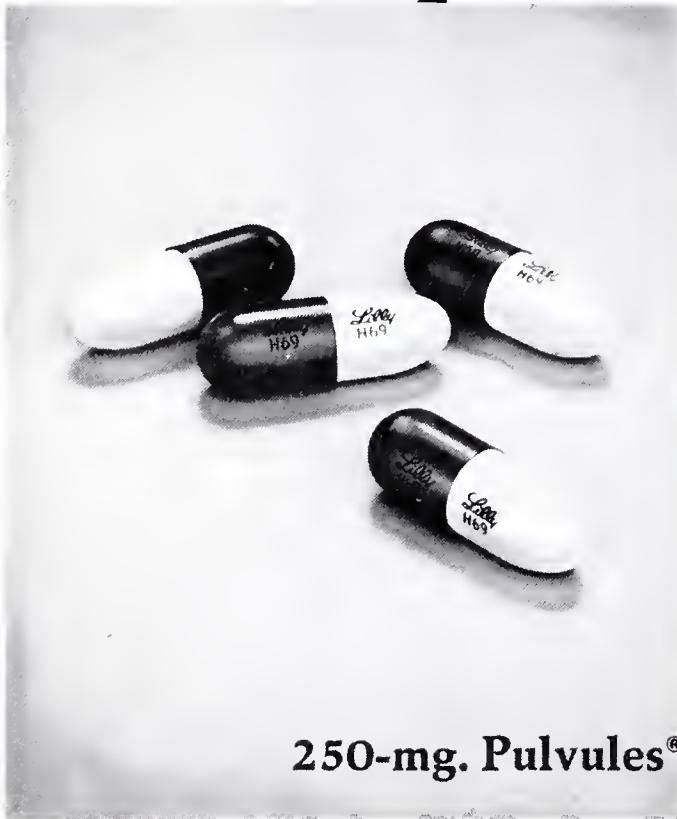
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SPONTANEOUS ESOPHAGEAL RUPTURE:

A REPORT OF TWO CASES

David W. Templin, M.D.

While perforation of the esophagus has increased recently as a result of the increasing use of endoscopy, the catastrophic entity of spontaneous rupture of the esophagus occurs infrequently and the similarity of findings to those of other more common problems may lead to a delay in diagnosis. Mortality and morbidity in this condition are greatly increased if treatment is delayed.

In 1724 Herman Boerhaave of Leiden described the clinical and autopsy findings of Jan Gerrit, Admiral of the Republic and Baron of Wassenaar who became ill following induced vomiting after a large meal. The admiral died three days later and an autopsy showed a perforation of the lower esophagus with food and fluid in the pleural cavity.¹ Boerhaave's Syndrome, spontaneous rupture of the esophagus, occurs five times more commonly in men than in women, generally in the 5th or 6th decade and almost always following forceful emesis.² It is frequently associated with alcohol ingestion, peptic ulcer disease and hypertension. Abdominal or chest pain of sudden onset occurs in almost every case. The pain radiates to the back and is unremitting and intensified by swallowing or lying down. Emesis usually continues and while small amounts of blood may be present frank hematemesis is rare. The patient usually sits upright and refuses to lie down. Dyspnea is common. Examination may reveal subcutaneous emphysema, abdominal tenderness or rigidity,

cyanosis, and fever in a patient who appears acutely ill.^{3,4}

Case Reports

Case No. 1: A 39-year-old Eskimo male who had been drinking heavily developed epigastric pain following emesis of some dark blood. The pain localized in the chest and radiated to the back. Six hours after onset he was admitted to the Alaska Native Medical Center. Past history revealed only an episode of ulcer-like symptoms with a negative UGI two years before admission.

On examination the blood pressure was 110/80, the temperature 98⁸ and the pulse 90. He was sitting upright and resisted all efforts to get him to lie down. Mild epigastric tenderness was present. There were no rales. The initial impression was "acute pancreatitis or Mallory-Weiss Syndrome." Chest x-ray revealed mediastinal air on the left and a swallow of radio-opaque material confirmed esophageal perforation. WBC was 20, 700; hematocrit was 44% and stool guaiac was negative. At surgery 7½ hours after admission a 3 cm. rent extending into the stomach was present in the lower left esophagus. Gastric contents and barium were present in the mediastinum. The rent was sutured and the mediastinum drained. Postoperatively delirium tremens and pneumonia developed. The patient was discharged on the 16th day afebrile and ambulatory.

Case No. 2: A 44-year-old Eskimo female developed severe, unremitting back pain after vomiting. Fish and four cans of beer had been ingested before emesis, which was non-bloody. Six hours after onset she was admitted to the Alaska Native Medical Center. Past history revealed that a duodenal ulcer was diagnosed in

Dr. Templin is currently Medical Director at the PHS Alaska Native Medical Center, Anchorage, Alaska 99510.

The opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Indian Health Service.

1967.

On examination the blood pressure was 126/70 and the pulse 120. The patient was sitting upright in severe pain. Subcutaneous emphysema was present in the supraclavicular area. There were bilateral rales in the lung bases. Abdominal examination was negative. Hematocrit was 32% and fell to 29%. An x-ray contrast study showed radio-opaque material in the mediastinum. Six hours after admission surgery revealed a 10 cm. rent of the left anterior esophagus with clots and gastric contents in the mediastinum. The tear was sutured and drained. Convalescence was complicated by pneumonia, mediastinitis and depression. The hospital stay was 25 days.

DISCUSSION

Spontaneous rupture of the esophagus may be mistaken for other more commonly encountered conditions such as perforated ulcer, myocardial infarction, pancreatitis, esophagitis, cholecystitis, dissecting aneurysm, pericarditis, pneumonia and pulmonary embolus.^{1,4,5} Mallory-Weiss Syndrome, which involves a tear at the gastroesophageal junction of the mucosa and submucosa only, generally follows emesis. It usually is painless and frequently accompanied by massive hematemesis but may at times be confused with Boerhaave's Syndrome. The clinical findings previously mentioned, coupled with the awareness that spontaneous rupture of the esophagus may occur, generally will suggest the diagnosis, which may then be confirmed by a swallow of some radio-opaque material. Treatment consists of surgery with suture of the perforation and drainage.

A rapidly made correct diagnosis is imperative. In one series 50% died in 24 hours and 90% in 48 hours if untreated.⁶ The morbidity following delayed treatment is impressive and includes empyema, fistula, subphrenic abscess, septicemia, and esophageal stricture.

CONCLUSION

Two cases with spontaneous rupture of the esophagus are presented. Diagnosis of the condition tends to be delayed. Mortality and morbidity associated with Boerhaave's Syndrome can be markedly reduced with prompt diagnosis and treatment. □

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PARALYTIC SHELLFISH POISONING IN THE NORTH PACIFIC:

Two Historical Accounts and Implications for Today

Robert Fortune, M.D.

INTRODUCTION

Paralytic shellfish poisoning, or PSP, is caused by the human ingestion of a powerful toxin produced by several species of dinoflagellates which are used as food by various types of bivalve molluscs, especially mussels and clams. Under certain conditions, these toxic dinoflagellates may multiply rapidly and discolor a wide area of coastal waters, causing a so-called "red tide."

Beginning in early August, an extensive red tide was observed, first in Resurrection Bay, near Seward, and later spreading to many other parts of the southcentral Alaskan coast.¹⁻² As a result of toxin assays both on the plankton itself and on shellfish samples, clamping beaches in Prince William Sound, Kachemak Bay, Kodiak Island, and the Alaska Peninsula were closed for the season.³ Fortunately, as of the end of August, no human cases of PSP had been identified.⁴

This paper describes two incidents of shellfish poisoning which occurred within several years of each other on the northwest coast of the continent almost two centuries ago. One episode is notable for its clinical detail and the other for its magnitude and historical significance. Following the historical accounts, more recent outbreaks, together with the causes, prevention, clinical features, treatment and epidemiology of paralytic shellfish poisoning in Alaskan waters will be summarized from a contem-

porary standpoint.

THE REPORTS

1. In the late spring of 1793, Captain George Vancouver, in his ships *Discovery* and *Chatham*, was exploring and charting the islands, bays and inlets along what is now the northern British Columbia coast. On the 15th of June two boat parties were investigating the small coves and bays north of Milbanke Sound. The day was rainy and unpleasant. About 8:00 o'clock in the morning the boat crews stopped for breakfast on shore. There they supplemented the food they had brought along, as they had done before, by gathering and roasting mussels which they found in the sand and among the rocks. The events that followed may best be described by a direct quote from Vancouver's published account:⁵

Mr. Johnstone [leader of the *Chatham* boat party] was now informed by Mr. Barrie [leader of the *Discovery* party], soon after they had quitted the cove, where they had breakfasted, several of his crew who had eaten of the muscles [sic] were seized with a numbness about their faces and extremities; their whole bodies were very shortly affected in the same manner, attended with sickness and giddiness. Mr. Barrie had, when in England experienced a similar disaster, from the same cause, and was himself indisposed on the present occasion. Recollecting that he had received great relief by violent perspiration, he took an oar, and earnestly advised those who were unwell, viz. John Carter, John M'Alpin, and John Thomas, to use their utmost exertions in pulling, in order to throw themselves into a proper perspiration; this Mr. Barrie effected in himself, and found considerable relief; but the instant the boat landed, and their exertions at the oar ceased, the three seamen were obliged to be carried on shore. One man only in *Chatham*'s boat was indisposed in a similar way. Mr. Johnstone entertained no doubt of the cause from which this evil had arisen, and having no medical assistance within his reach, ordered warm water to be immediately got ready, in the hope, that by copiously

Dr. Fortune is Director of the PHS Alaska Native Medical Center, Box 7-741, Anchorage, Alaska 99510.

The opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Indian Health Service.

drinking, the offending matter might have been removed.

Despite the best efforts of the men, Seaman Carter expired about a half hour after the boat landed. The account continued:

There was no doubt that this was occasioned by a poison contained in the muscles he had eaten about eight o'clock in the morning; at nine he first found himself unwell, and died at half past one; . . . From his first being taken his pulse were regular [sic], though it gradually grew fainter and weaker until he expired. . . .

The other affected seamen apparently did not take matters too seriously until their companion died before their eyes. The account relates that they found considerable relief from their symptoms by drinking copious amounts of the hot water. The following day, although somewhat improved, the men were still excessively weak and complained of numbness, with violent abdominal pains and dizziness.

The description concludes with a significant observation:

From Mr. Barrie's account it appeared, that the evil had arisen, not from the number of muscles eaten, but from the deleterious quality of some particular ones; and these he conceived were those gathered on the sand and not those taken from the rocks — Mr. Barrie had eaten as many as any of the party, and was the least affected by them.

The difference in toxicity is probably explained by the fact that the mussels on the sand had had through tidal action a greater exposure to the toxic plankton than those on the rocks.

Vancouver named the spot where the unfortunate victim was buried Carter's Bay, located at 52° 48'N. and 128° 6'W. "(T)he fatal spot where the muscles were eaten," a few miles to the north and east, he called Poison Cove, situated on the east side of a branch of the inlet he designated as Muscle Canal.

2. The details of the second and much more significant episode of shellfish poisoning are less precise, probably because its victims, being Aleut hunters, lacked a chronicler of Vancouver's stature. Alexander Baranof, accompanied by hundreds of Aleut bidarkas had sailed from Kodiak in April 1799 for southeastern Alaska in order to establish a new settlement there. Plagued by bad luck and reverses he and his men finally erected a small fort called St. Michael some six miles north of the present town of Sitka.

An eyewitness account given by an old Koniag named Arsenti Aminak to H. J. Holmberg, describes the events that followed:⁶

Soon after the founding of the new fort on Sitka Island, I was in the sea-otter party which had been ordered to winter at Sitka, but upon our arrival there, Medvednikof, who was in command, informed us that because of the lack of provisions, only half the party could remain, and that the other half must return to

Kodiak. I was among those who returned. When we found ourselves in the straits, because of lack of fresh fish we were compelled to eat mussels which must have been poisonous at this time of year. A few hours later more than one half of our men were dead. Death took hold of me also, but I remembered the advice of my father to eat raw smelts in such cases; I vomited, and was cured.

The account by Baranof's biographer, Khlebnikov, adds significant details:⁷

On the 18th [of July] news was received that a party of Aleuts had stopped overnight in Peril Strait . . . and there had eaten their fill of mussels and within two hours many of them had been stricken with terrible convulsions and more than one hundred had died. Their suffering began with nausea and dryness of the throat, followed by cramps. The leaders of the party felt that the best treatment was to bring on vomiting, and since they had no medical supplies they administered a mixture of ground gunpowder, tobacco, and soapsuds. By this means relief was secured in many cases.

The location of this tragedy of the first magnitude was a stretch of water which came to be known in Russian as Proliv Pogibshiy, later translated by the U. S. Coast and Geodetic Survey in 1882 as "Peril Strait." It extends 45 miles from Salisbury Sound to Chatham Strait, between Chichagof and Baranof Islands (57° 30'N. 135° 13'W.).⁸ (Figure 1)

DISCUSSION

The two episodes of poisoning described in this paper are almost surely PSP, since the clinical and epidemiological features of both are quite typical. The Vancouver account, in fact, is probably the first episode of PSP described anywhere in North America.⁹

In more recent times, clinical episodes of PSP have occurred in Alaska at False Pass in the Aleutians and near Juneau, Peril Strait, Porpoise Island, and Tenakee in southeastern Alaska. (Figure 1)

The False Pass episode occurred in July 1954 and involved seven workers in a local salmon cannery. Six of these consumed the mussel *Mytilus edulis* collected from several locations along the beach on the same day. At the first evidence of toxic symptoms they reported to the cannery hospital where they received gastric lavage and medications and recovered without incident. The seventh patient apparently ate the mussels four days later. Symptoms of severe abdominal pain with nausea and vomiting began between 2:00 and 4:45 p.m. and the patient died at 5:00 p.m. The toxic episode was attributed to the dinoflagellate *Gonyaulax catenella*. Bio-assay of mussels collected in the area showed that approximately four ounces of the raw shellfish would be expected to be lethal to humans.¹⁰

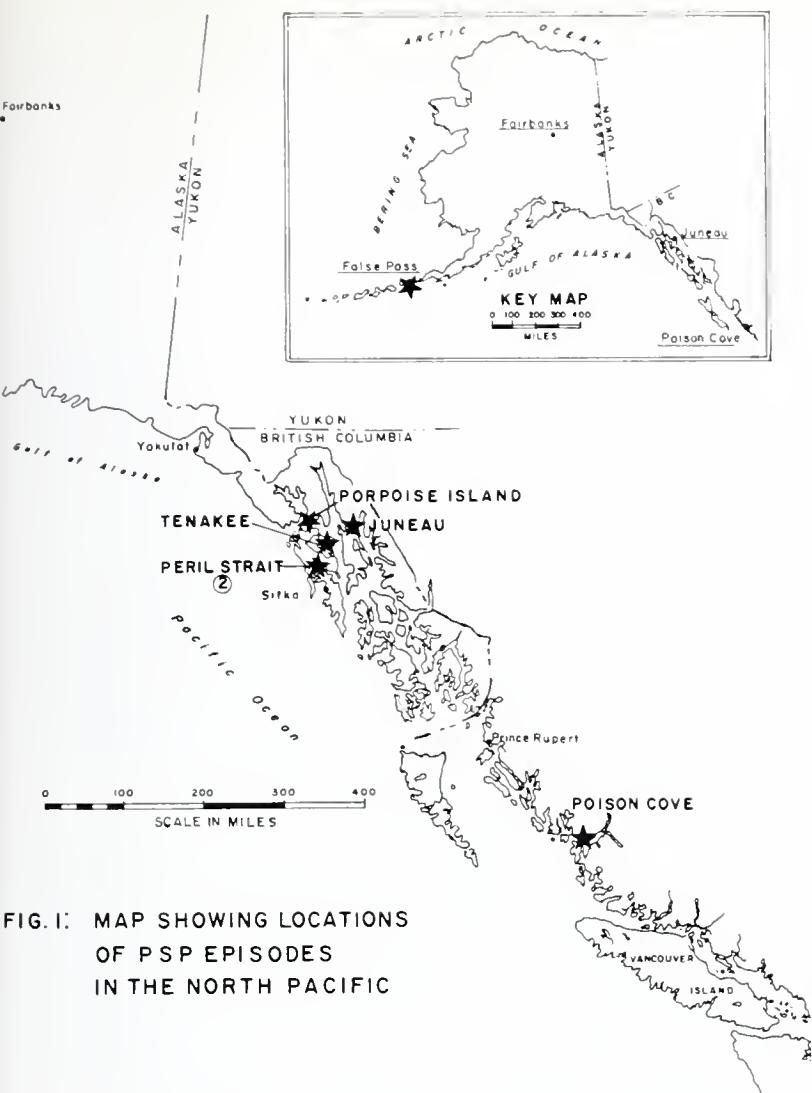


FIG. 1: MAP SHOWING LOCATIONS OF PSP EPISODES IN THE NORTH PACIFIC

In the summer of 1934 an episode of alleged PSP occurred near Juneau involving fourteen persons, two of whom died. No other details seem to be available.¹¹

In June 1962 a serious incident of PSP occurred in southeastern Alaska resulting from the ingestion of little-neck clams *Protothaca staminea* dug on the beaches of Porpoise Island not far from Gustavus. A total of 25 individuals from four fishing boats exhibited symptoms, with nine of them being hospitalized at Juneau and the other 16 being treated by the public health nurse in Hoonah. There were no fatalities. On two of the vessels, the clams were eaten fried and symptoms supervened about 3 hours later. Those affected induced vomiting by drinking vinegar and canned milk. Although the necks had been removed from the clams they had been left in the same bowl with the rest of the flesh. The crew of one of the other vessels had dug the clams in the same location but had used them for a chowder. The necks had been removed but the clams were not gutted. A few of the men ate the clams raw or drank the nectar. All six crew members who ate the clams became ill, but the time of onset was some hours after ingestion. The crew from the fourth boat had clams steam-

ed and boiled for 45 minutes. Two of those who ate the clams had no symptoms, two were very ill, and the others were sick to varying degrees.¹²

The most recent reported episode of PSP in Alaska took place near Tenakee on Chichagof Island on September 25, 1973. Two persons developed severe symptoms of PSP after eating butter clams (*Saxidomus giganteus*) dug near the boat harbor. Of special interest is the fact that 5 days earlier an unusual occurrence of marine bioluminescence was noted in the area and samples of plankton taken at the time revealed large numbers of *G. catenella*. Two weeks later *G. catenella* was no longer found but mussels collected nearby showed high toxin levels.¹³

Undoubtedly other cases of PSP have occurred in Alaska but details are lacking. A vague reference was found to an outbreak in Peril Strait involving three persons from Sitka, one of whom died.¹⁴ The elderly Koniag witness to the disastrous Peril Strait incident of 1799 recalled the advice of his father about what to do. Holmberg, in 1854, stated that the Koniags knew that mussels were poisonous during certain seasons and at certain locations.⁶ Aleuts at False Pass and other points on the Aleutian Chain recalled episodes of sickness and even death after eating mussels, but no medical assistance had been available.¹⁰

Paralytic shellfish poisoning has been recorded in nearly all parts of the world, but is considered to be most prevalent in temperate regions, especially during the warmer months of the year.¹⁵ As stated above, it is caused by the consumption of shellfish which have taken up a powerful neurotoxin produced by certain dinoflagellate organisms, notably of the genus *Gonyaulax*. The so-called "red tide," in which large areas of sea water take on a reddish hue, may occur when the dinoflagellates produce a "bloom" resulting from unusually favorable conditions of tide, water temperature, salinity, and nutrients.¹⁶

As in the two historical accounts presented, mussels have been commonly implicated as a source of PSP throughout the world. The blue mussel *Mytilus edulis* was probably the specific culprit in both early incidents since these mussels are common in protected bays and estuaries both in southeastern Alaska and in British Columbia. They are known to absorb the toxin rapidly, although they also seem to lose their toxicity rather quickly, compared to other molluscs. Other shellfish known to be toxic under certain conditions in Alaska include the butter clam, the little neck clam, the razor clam (*Siliqua patula*), and the Pacific oyster. Butter clams in particular tend to accumulate the toxin

in the siphons and may remain toxic throughout the year, whereas the others are more likely to be toxic in the warmer months. Little neck clams and oysters, though they are sometimes toxic, tend to retain only small amounts of the poison.¹⁵

The toxin accumulates in the molluscs, being stored primarily in the siphons, digestive organs, necks and gills. The muscle, or white meat, is comparatively safe.

The toxin of PSP, known as saxitoxin, is an extremely powerful poison, estimated to be 50 times more toxic than curare. Severe symptoms have developed in humans after ingestion of as little as 124 mcgm and death has occurred after 456 mcgm.¹⁷ The toxin is a metabolic product of the dinoflagellate species and is apparently bound to molluscan tissues unchanged.¹⁵ Though it has relatively little effect on the molluscs, some have observed that toxic clams retract their necks sluggishly when disturbed.⁹ It is the predators on shellfish, rather, such as ducks, gulls, and man, which are exquisitely susceptible to the toxin.

The dinoflagellate *Gonyaulax catenella* is considered the most likely source of PSP in Alaska. Although surveys have not shown this organism to be particularly common in Alaskan waters, it has been definitely implicated in two clinical episodes.^{10, 13} Chemical and physical properties of the toxin collected from butter clams in Alaska, moreover, are identical to those of *G. catenella* toxin.¹⁵ Another similar organism, *G. acatenella* (thought by some workers to be conspecific with *G. catenella*) has been implicated in an outbreak of PSP in British Columbia.¹⁵

It is of interest that none of the clinical episodes described in this paper, including the two historical accounts, were specifically associated with a red tide, as is common in other parts of the world; on the other hand, a red tide was recently reported from southeast Alaska consisting of an euglenoid flagellate and a ciliate species of protozoa, neither of which has shown toxic properties.¹⁸

Clinically, symptoms usually develop within 30 minutes of eating poisoned shellfish. Tingling or burning of the lips and tongue may be the first indications, followed by paresthesias and numbness of the neck, arms, and legs. General motor incoordination may then supervene, together with weakness, lightheadedness, tachycardia, headache, dryness of the mouth and throat, and visual impairments. Nausea, vomiting, diarrhea, and abdominal pain are less frequently encountered.¹⁵ Diffuse erythema with swelling and urticaria are occasional findings.¹⁹ Mental processes generally remain un-

affected, even in those cases which have a fatal outcome but speech may become incoherent and aphasia has been described.²⁰ Death, when it occurs, results from progressive respiratory paralysis some three to ten hours after ingestion. Recovery without permanent sequelae usually occurs if the affected individual survives 12 hours.¹⁵

Treatment is primarily supportive and symptomatic. No antidotes are known. Alcohol is contraindicated since it hastens gastric absorption of the toxin.¹⁷ Emetics and laxatives have been recommended, as well as increased fluid volume to promote diuresis. Artificial ventilatory support may be required until the paralytic effects of the toxin wear off.

The extent of PSP hazard in Alaska is difficult to assess, since episodes of clinical poisoning have been widely scattered and reported over a span of many years. What is certain, however, is that the problem of PSP is widespread and has, in fact, had a serious impact on an important Alaskan resource.

During World War II the Alaskan frozen and canned clam industry was an important source of prosperity, especially during the winter, in southeastern Alaska. In January of 1946, however, the U. S. Food and Drug Administration withheld shipments of frozen butter clams from Alaska because of their toxicity.¹¹ That same year and over the next five years a widespread survey of Alaskan shellfish beaches was undertaken, especially in the area around Ketchikan. The problem of toxic clams was found to be widespread in southeastern Alaska and the commercial processing of butter clams virtually closed down.¹⁴ Although the FDA relaxed its stringent requirements in 1951, the industry never regained its former prominence.

The Arctic Health Research Center carried out surveys for toxic shellfish in 1954 and 1955 throughout the Pacific Coastline of Alaska, giving attention to Prince William Sound, Cook Inlet, Kachemak Bay, Kodiak Island, and the Aleutians, as well as Southeastern Alaska. Shellfish with excessive levels of toxin were found in False Pass and the southern half of Kodiak Island.^{10, 21}

In the spring of 1962, the Alaska Division of Public Health, in cooperation with the U. S. Public Health Service, undertook studies of toxic clams in southeastern Alaska to determine the source and nature of the toxin, and to seek means of detecting the toxin easily and detoxifying the clams for human consumption. That summer and the next, it was determined that both butter clams and little neck clams showed high levels of toxicity, up to 13,000 mouse units per 100 gm, some 32 times the limit

set by the Food & Drug administration for commercial distribution. Toxic molluscs were found in numerous locations near Ketchikan, Petersburg, and the Chatham Strait area.¹²

The Good Friday Earthquake of 1964 disrupted several excellent shellfish beaches, notably the razor clam beds at Cordova, thus striking another blow at the industry.

None of these studies were successful in developing an easy field testing procedure for the presence of toxin, or an economical means of detoxifying shellfish for commercial use.¹⁵

Today the Alaska Division of Marine and Coastal Zone Management maintains a "red-tide alert" and investigates sightings of red water or unusual bioluminescence.¹⁸ The Alaska Department of Health and Social Services participates in the National Shellfish Sanitation Program and regularly submits samples of clams from three locations for testing by the State Laboratory. The Laboratory also tests suspected molluscs submitted to them.³

Clam digging in Alaska today is largely a recreational activity rather than a commercial one, although some commercial razor clamping has been permitted since 1970 at Cordova, Swikshak on the Alaska Peninsula, and Polly Creek on the west side of Cook Inlet.²² There are still many who will cheerfully risk wet feet, aching back muscles, and the possible toxic hazard to feast on these Alaskan delicacies.

No doubt PSP could be totally prevented if no more shellfish were consumed. Since many Alaskan gourmets would consider the cost of such a gastronomic denial too high, a more practical course of action would be summarized by the following rules:

1. Before digging, check to see whether the beach is open for clamping.
2. Avoid all shellfish in the warmer months, and butter clams all year round.
3. Never eat raw shellfish.
4. Remove and discard digestive organs, gills, necks, and siphons.
5. Discard the broth in which the shellfish are cooked.
6. Seek medical assistance immediately upon the appearance of toxic symptoms.

CONCLUSIONS

Paralytic shellfish poisoning occurs in widely scattered areas along the Pacific coastlines of Alaska and British Columbia. This paper describes two episodes in historical times and reviews the recent status of this problem in Alaska.

PSP results from the ingestion of a variety of molluscs, particularly mussels and clams, which have been contaminated by feeding on certain

species of dinoflagellates, notably *Gonyaulax catenella*. The poisonous substance is a potent neurotoxin which in even small amounts may cause death within a few hours. Treatment for the condition is non-specific and includes the induction of vomiting and general life support measures. The condition may generally be prevented by removing the necks, siphons, and digestive organs of the shellfish, where the toxin tends to accumulate, and by thorough cooking and drainage of the flesh.

"Red tides," which have been associated with PSP in other parts of the world, may not necessarily be identified prior to the occurrence of clinical cases. □

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LINITIS PLASTICA IN A 16-YEAR-OLD

Ward B. Hurlburt, M.D., F.A.C.S.

Forty years ago cancer of the stomach was the leading cause of cancer death in men and second only to uterine cancer in women in the United States. The U. S. incidence and death rates have steadily decreased during the time since, until now gastric cancer is only the fifth leading cause of cancer death in males and the eighth in females. The current death rate is less than one-third the rate of forty years ago for men and less than one-fourth that for women.²¹

Stomach cancer is usually thought of as a disease affecting older adults. Viedenheimer and Logan²⁴ reported the average age to be 60 years in patients seen at the Lahey Clinic. Keller and Kinsey¹² found 63 years to be the average at Ohio State University Hospital. The experience at the Alaska Native Medical Center, during the past three years since instituting a complete tumor registry, has revealed an average age of 56 years in the 12 patients seen or 59 years in the cases excluding the case reported herein.

Twelve cases of gastric cancer diagnosed in Alaska Natives from 1972 through 1974 represent an incidence rate twice that expected in a population group of that size.¹ Cancer of the stomach is uncommon in younger people. In addition to the 16-year-old patient reported here two of our patients were 24 and 36 years old at the time of diagnosis.

Reports of gastric cancer in the young are not rare, though generally the point is made that because it is uncommon in patients below 30 or 35 delay is often encountered in making the diagnosis. Goldstein^{6,7} in two rather wide-ranging articles in 1941 reviewed the world literature on cancer of the stomach in the young. In the same year McNeer¹⁵ identified five hundred

cases under 31 for statistical analysis. Both authors included a rather extensive bibliography. McNeer¹⁵ estimated that one or two patients in a thousand with cancer of the stomach would be under 21 years. Block⁴ in 1948 reported that of 1,913 cases seen at the University of Michigan Hospital between 1925 and 1945 only 20 were less than 31 years. He pointed out that while youth is often an obstacle to making the diagnosis, of 73 gastric lesions identified in patients under 31, 50 were benign ulcers, 20 were carcinomas, 2 were lymphoblastomas and 1 was gastric lues. Thus while gastric lesions were uncommon in this age group, when they did occur there was a 30% chance of malignancy. Other earlier reviews generally agreed that about 1% of gastric malignancies occurred in patients under 30.^{3,8,14,17} Although there is a citation of an 1877 report of gastric carcinoma in a 10-day-old child¹⁷ the younger the age the rarer the occurrence of stomach cancer becomes.

In more recent reports Tamura²² noted 8 gastric cancers in patients under 31 years from three Honolulu hospitals. Alaghemand² in 1962 reported a case of papillary adenocarcinoma in an 11½-year-old Negro male. Richardson¹⁹ reported 9 patients aged 25 to 34 with, surprisingly, 4 being alive 8 years or more postoperatively. In a report from Istanbul, Kalbasi¹¹ told of a case of carcinoma of the stomach in a 19-year-old female who had had peptic ulcer type symptoms for 2½ years. More recent review articles, though not as extensive as the earlier one, have been presented by Pickett¹⁸ and Janower.⁹

CASE REPORT

The following report is presented because of the age of the patient and several interesting aspects of the case. The patient, a 16-year-old Eskimo girl was admitted to the Alaska Native Medical Center in July 1973. Four weeks prior to admission she had noted the onset of episodes of severe colicky abdominal pain occurring several times a week. The day before admission the

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The opinions expressed in his paper are those of the author and do not necessarily reflect the views of the Indian Health Service.

patient noted periumbilical pain with radiation to the left shoulder. This was associated with fever and became more generalized. There had been no prior history of weight loss, vomiting, burning abdominal pain or gastrointestinal bleeding. Upon examination by a physician in her village she was found to have an acute abdomen and was transferred to Anchorage for definitive care. Examination revealed a normal appearing young lady in acute distress. The temperature was 39° Centigrade orally, the abdomen rigid and silent, with diffuse tenderness and rebound tenderness in all quadrants. The psoas sign was positive and she had bilateral rectal tenderness. Her blood type was A positive.

At exploration a 3 to 4 mm. perforated gastric ulcer was found on the lesser curvature near the pylorus. The distal stomach was noted to be thickened. Postoperatively the patient exhibited a spiking fever, an increasingly tender abdomen and a left supradiaphragmatic atelectasis and pneumonia. An upper gastrointestinal x-ray revealed a large greater curvature gastric ulcer with leakage into the lesser omental sac, impairment of gastric mobility and mucosal distortion suggestive of malignancy.

The patient was re-explored with drainage of a large abscess of the lesser peritoneal bursa and biopsy of the stomach and nearby lymph nodes. The stomach was virtually totally involved with a thickened edematous infiltrative process characteristic of linitis plastica. Pathologic interpretation of the biopsy material was difficult but a diagnosis of poorly differentiated infiltrating adenocarcinoma was made and confirmed by the Armed Forces Institute of Pathology. After the definitive diagnosis had been received and the intra-abdominal infection controlled the patient underwent a total gastrectomy, splenectomy, omentectomy and removal of nearby nodal tissue with creation of a Poth pouch type neogastrum.

The patient received good palliation for about six months but then experienced recurrent vomiting and weight loss. Re-exploration revealed large tumor recurrence of the upper abdominal cavity with extension to adjacent liver and colon. Resection was not technically possible. A colo-colostomy was done to bypass the obstructed segment. Attempt at a feeding jejunostomy was not felt to be practical due to the extent of the tumor involvement intra-abdominally. Relief was of brief duration because of the partial obstruction and symptoms of tumor toxicity. The patient was therefore started on 5-fluorouracil (5-FU) and parenteral hyperalimentation.

Since the patient preferred to return to her home in Kotzebue, she and her mother were instructed in safely managing and maintaining the parenteral hyperalimentation apparatus. The pharmacist in Kotzebue was experienced in mixing the solution under appropriate conditions and had a laminar flow hood available. The patient was maintained in this manner for about five months. She experienced an initial subjective favorable response to the 5-FU with a clinical impression that the growth rate of the tumor had been retarded. She was encouraged to eat what she wanted, even though much of her oral intake was vomited, since this was felt to be important to her mental health. Strength and weight were initially fairly well maintained by the outpatient parenteral alimentation. During these five months the patient was able to be up and about much of the time and to attend her school prom. Death occurred about one year after the diagnosis had been made.

DISCUSSION

The case presents several interesting aspects.

Lowenfels¹³ notes that blood group A increases the risk of gastric carcinoma by about 20% in areas with both high and low overall rates. Cortese⁵ reports on the rarity of perforation in patients with gastric cancer. Of 2,181 patients with gastric adenocarcinoma seen between 1932 and 1969 at the New York Hospital — Cornell Medical Center only 13 (0.6%) presented with perforation. Of these only three (0.1%) had linitis plastica.

The prolonged use of parenteral hyperalimentation on an outpatient basis enabled this patient to enjoy a number of activities she would otherwise have missed. It maintained her nutritional state during a time most of which she was not in a great deal of other distress. There are several reports in the literature of prolonged use of total parenteral alimentation for patients with chronic bowel disease or short gut syndrome.^{10, 16, 20, 23}

The use of this modality of nourishment on an outpatient basis to help maintain a reasonable quality of life for patients with intra-abdominal cancers has apparently not been widely reported and in cases such as the one presented here may have much to offer.

SUMMARY

Gastric cancer is uncommon in the young. Occasional reports are found in the literature and reviewed here. This article reports a case of a 16-year-old Eskimo girl unusual because of her young age, the presentation with a perforation and the presence of a linitis plastica type involvement. Management was somewhat unique because of the prolonged use of outpatient total parenteral alimentation during her final months of life. □

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ALASKA PHYSICIAN MANPOWER

CHARACTERISTICS AND TRENDS

Stephen S. Barber and Karen Crouse

Recently the Office of Comprehensive Health Planning, in conjunction with the Alaska State Medical Board, conducted a survey of physicians licensed by Alaska, by including the survey form with the physician's license renewal form. The main purpose of the survey was to achieve a characteristics profile of the Alaska licensed physician. The second purpose of the survey was to test the feasibility of collecting information about the medical practice via the license renewal form. The third purpose was to see what comparison could be made among the in-state Alaska licensed physician, the out-of-state Alaska licensed physician, and the physician nationwide; and to see if any trends for Alaska could be forecast from the results.

A mailing of the forms was conducted in November 1974 and their return completed in February 1975, achieving an overall response rate of 80% (81% for out-of-state Alaska licensed doctors and 79% for in-state Alaska licensed doctors). The high response rate compares favorably with the 77% response rate recently achieved by a national American Medical Association survey.

The characteristics by which the physicians were asked to describe themselves and their medical activity were: age, board certification, practicing actively or inactively, type and size of practice, average number of hours and weeks spent in medical activity, number of patients in practice, and whether engaged in practice in-state or out-of-state. Two additional areas of special interest to the Alaska situation were also included; willingness to provide itinerant services, and future professional plans that might

affect medical activity or cause a change of location.

A look at Table I shows the results of the specific questions asked; and, in a comparison of characteristics of the Alaska-licensed doctor residing in-state and the Alaska-licensed doctor residing out-of-state and the nationwide doctor, the following profile of the Alaska in-state physician emerges:

He is overall, younger than his counterpart in the "lower 48";

- less apt to be a foreign medical graduate;
- more apt to be board eligible or board certified and licensed by exam (see Table I);

- more likely to be actively practicing (see Table I) and have a private, solo practice of smaller size than those "outside";

- sees fewer patients per week, but spends more hours in patient care and about the same number of weeks per year;

- more willing to provide itinerant services;
- as likely to change locations or retire.

As for the future, the survey revealed some interesting trends. The survey showed that as many physicians currently licensed by Alaska (28) plan to move into the state as plan to move out (27) next year, and that very few (5) said they plan to retire next year. Also, the number of new licensings issued in Alaska each year from 1967 to 1974 has doubled from 40 to 83; and other surveys indicate that doctors, when considering where to set up a new practice, are attracted to areas of increasing populations, high incomes and good environmental factors; all of which are characteristic of Alaska. These facts, when put together, plot an upward, future trend for Alaska physician manpower. If this trend continues, the number of physicians per popula-

Stephen S. Barber and Karen Crouse, Office of Comprehensive Health Planning, Pouch H 01 A, Juneau, Alaska.

TABLE I

	In-State	Out-of-State	Total	Nation
Actively Practicing	94.3%	91.3%	93.3%	94.4%
Board Eligible	72.3%	64.3%	68.1%	
Board Certified	59.2%	56.7%	58.0%	
Foreign Medical Grad	7.8%	13.6%	10.9%	18.0%
Licensed by Exam	15.8%	12.4%	14.8%	67.4%
Form of Practice				
(a) Solo	56.8%	47.6%	52.5%	
(b) Partnership	15.1%	24.7%	19.6%	
(c) Group	28.1%	27.7%	27.9%	17.6%
Type of Practice				
Private	73.7%	66.8%	70.2%	
State	4.1%	5.0%	4.6%	
Military	7.5%	3.4%	5.6%	
Public Health	5.3%	2.5%	4.0%	
Other	9.8%	22.3%	15.7%	
Average Age	40.0	43.3	41.6	46.1%
Interested in Itinerant Work				
Yes	36.8%	20.0%	29.1%	
No	35.5%	49.7%	42.0%	
Maybe	27.8%	30.2%	28.9%	
Number of Patients in Practice				
0-499	23.5%	23.8%	23.6%	
500-999	11.4%	8.6%	10.1%	
1000-1999	23.5%	12.4%	18.6%	
2000-2999	12.9%	13.3%	13.1%	
3000-9999	21.2%	28.6%	24.5%	
10000+	7.6%	13.3%	10.1%	
Average Number of Hours Spent in				
(a) Patient Care	49.5	41.2	45.4	44.7%
(b) Administration	8.4	8.8	8.6	
(c) Other	7.4	9.3	8.4	
Average Number of Visits/Week	103.4	117.7	109.6	132.5%
Number of Weeks per Year	43.7	43.8	43.8	48.0%

tion will continue to increase for a number of years, in most parts of the state. Of the 83 doctors newly licensed in Alaska in 1974, about 41% have already established residence in Alaska. All of these are actively practicing and about 50% have primary care specialties (General Practice, Internal Medicine, Pediatrics, Family Practice, or Obstetrics and Gynecology). Most (59%) have established residence in the Anchorage area, which, as the main population center in Alaska, has the most medical facilities. This follows the national trend which indicates that the majority of physicians settle in areas of high population, which are major drawing places for physicians.

As for the rest of the state, there are many isolated areas with a low population which cannot support a full-time private physician. For

these places, itinerant services are becoming increasingly feasible. More than a third of the physicians surveyed (36.8% in-state) said that they would be willing to provide services outside of their locality. Out-of-state physicians also indicated on the survey an interest in holding short-term "bush" clinics during the summer for a month or two in return for expenses.

In conclusion, the results of the survey can be said to show that generally, the State of Alaska has a supply of active, young, qualified, patient-oriented physician manpower, which is growing larger every year, although there will probably always be some parts of the state with insufficient manpower. The survey also proved that the procurement of information about the medical practice via the license renewal form is a viable technique capable of achieving the high response rates needed for significant studies. □

COMMISSIONER'S PAGE

Francis S. L. Williamson

Commissioner

Department of Health and Social Services

To a few of *Alaska Medicine*'s readers, I'm sure the very word "reorganization" connotes a kind of government shuffle step done in time to a tune that only few of the dancers can hear. The term—or the idea—sometimes evokes a picture of office changing, paper and rhetoric production and power shifts in the executive strata, with little effect felt on the local and operational levels of an agency.

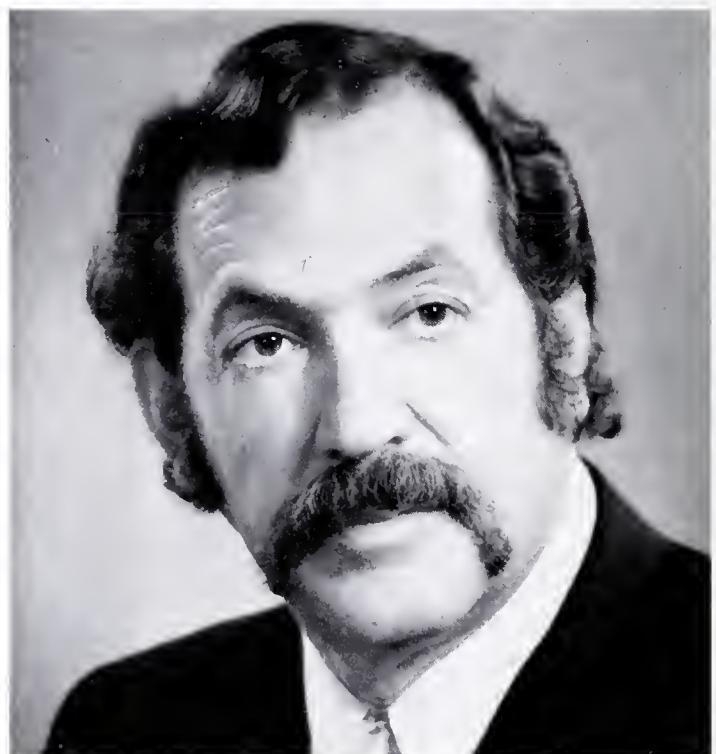
I begin in negative terms only to point out the built-in bias against which we are working during our reorganization in the Department of Health and Social Services. Further, I want to highlight the fact that we are not simply engaged in executive reorganization for its own sake but are in the process of applying some innovative management concepts to the terribly slippery core of human services delivery systems. The concept of human services integration is to provide a complete array of services to those who need them, with minimum barriers in terms of programmatic, geographic, and organizational differences.

The reorganization of this Department was stimulated by the understandably reluctant—though necessary—admission that we were, indeed, placing unnecessary barriers in the way of service delivery. Over a period of three months, we developed a combined product based on lengthy deliberation of a special Department Committee on Reorganization, advice from the division directors and separate office chiefs, and my own thinking. In a report prepared by the Committee on Reorganization, the primary tangible goals of our new structure are outlined as follows:

(1) The multitude of minutiae that presently occupies the Commissioner should be eliminated in order that he may be free to devote sufficient time to comprehensive, long-range planning, the establishment of policy, and direction of the operation of the Department's programs.

(2) The number of people reporting directly to the Commissioner should be reduced.

(3) Unnecessary levels of administration between the operating programs and the Commiss-



Francis S. L. Williamson

sioner should be eliminated.

(4) The efficient use of resources within the Department can be encouraged at the program level by tighter lower level control.

(5) The Department should strive to develop a unified delivery system with the overriding goal of improving services to the clients of this agency.

(6) Decentralization of program controls from the Commissioner's Office to the program administrators should be encouraged to increase specific accountability.

(7) The Commissioner's Office should be provided with the necessary support staff and manpower to carry out the duties and responsibilities of that Office.

Administrative requirements alone do not dictate structural policy, but we can only provide effective human services if fiscal and management functions not relating directly to actual

client services are treated as a unified and separate whole. In line with this thinking, I have appointed two Deputy Commissioners in Juneau: Ms. Catherine M. Lloyd is serving as Deputy Commissioner for Administrative Management, Ms. Lois Jund as Deputy Commissioner for Program Management.

By increasing specific accountability in the major functional areas of the Department, the reorganization will provide a more responsive management environment for our clients, service providers, and colleagues in government.

It is obvious that one aspect of the new organization, increased span of executive authority, is a radical departure from the previous policy of maintaining rigid and centralized executive control in the Office of the Commissioner. I also anticipate criticism aimed at what may be construed as "top-heavy" administration, but ask that such criticism be evaluated in the light of a Department with a myriad of programs requiring the handling of about one hundred million dollars annually, the employment of almost 2,000 people, and a spectrum of activity that touches the lives of all citizens of the State. It is also obvious and common knowledge that the constraints imposed by any such large bureaucracy are complex, frustrating, and seemingly infinite, and they make the entire management process extremely difficult. The identification and understanding of such constraints and their subsequent reduction is an important first step toward successful management in government.

For this Department to respond adequately to human needs in Alaska, decentralization and regionalization of activities must evolve. This cannot be accomplished by executive fiat from Juneau, but must be (1) the expression of the varying needs for services by people and communities throughout the State, combined with (2) the appropriate response from the central office, and evolving community-based offices. Meetings already begun with key individuals, advocate groups, communities, boroughs, the Alaska Federation of Natives, and Regional Corporations will be continued with the hoped-for outcome of a meaningful dispersion and coordination of the delivery process.

There is a real need for the Department of Health and Social Services to develop a clearly defined, realistic operating philosophy and to set goals and priorities. A Policy Development Coordinating Committee consisting of the division directors (Public Assistance, Family and Children Services, Public Health, Mental Health, Administrative Services); separate office chiefs (Alcoholism, Drug Abuse, Aging, Planning and Research); and a non-voting member from the

Commissioner's Office have been established. This Committee has elected officers, established a weekly meeting schedule, and has already completed studies of staff development programs within the Department. The crucial question of regionalization of program activities is also under consideration by the Committee and will be continued, with participation by the Alaska Federation of Natives and the Directors of the Regional Corporations. The value of this Committee lies in the fact that it reflects the collective best thinking of the principal program executives of the Department and, subject to review by the Executive Committee (Commissioner and Deputy Commissioners), will recommend the foundations for policy implementation in the Department.

Without an ongoing process of reassessment, no system can strengthen its commitment to responsive management and service. Accordingly, we are conducting new and in-depth studies directed toward existing programs and divisions. Assisted by the Touche-Ross firm, together with Deputy Commissioner Lois Jund, the Department is conducting a thorough review of the management of the Division of Family and Children Services. Under our current reorganization, Family and Children Services is free of obligations other than comprehensive program development in the social services, and it is my intent to insure that new directions triggered by the reorganization are approached from a sound management platform. Other reviews are being conducted in the Office of Alcoholism and in existing programs for the developmentally disabled and mentally retarded. The latter is being undertaken in concert with the Board of Association for Retarded Citizens of Anchorage and the Developmental Disabilities Council, and is moving toward a policy of de-institutionalization and increased community involvement. Decentralization is a key to responsiveness in the area of human services, and in this Department, it is a motivating principle.

The successful enactment of a sound reorganization plan is enhanced—indeed, made possible—by strong and active support from the Legislature and the Governor. While there are barriers to the anticipated, positive results of reorganization, including the integration of services, I feel that these can be overcome. While it may be too soon to know whether a comprehensive human resource agency is a vehicle which can successfully accomplish integration of human services, it remains that no other coordinating device or agency has made significant progress toward this end. We are in a somewhat privileged position here in Alaska, because we are not faced with the galloping magnitude of

social problems and the multitude of public and private agencies of the large urban states. We have an opportunity to seize control while the

situation is moving relatively slowly, and I intend to commit myself to that end. □

ALASKA STATE MEDICAL ASSOCIATION ANNUAL MEETING GLACIER BAY LODGE



Pioneer Alaskan physicians Drs. Earl Albrecht (left) and Francis Phillips (center) share some good stories with Marz Janzen, APRO director (right).



Dr. Tom Wood and his wife, Katie, seem to show good spirits in anticipation of camping out during the meeting.



Boarding the buses at Gustavus for the ride to the lodge.



Convention coordinators Martha MacDermaid (left), Priscilla Wilson (center) and Linda Hogan (right) check over reservations.



The long check in line produces some sober expressions.



Commissioner Dr. F. Williamson (left) and President-elect Dr. Robert Whaley.



Past President Dr. Rodman Wilson officiates during one of the business meetings as Dr. Marian Witt delivers a report.



President Dr. Gary Hedges (left) and Drs. Peter Hansen (center) and Elinor Harvey (right) listen as Secretary-Treasurer Dr. Douglas Smith makes a point during the business meeting.



AMA President Dr. Malcolm Todd (left) discusses Alaskan problems with Drs. J. Ray Langdon, Tom Stengl and Ed Spencer during the breakfast meeting.



Not much humor was evident during discussion of the state and national malpractice insurance crisis.



The trees, mountains, water and glaciers did occasionally produce some distraction.



Dr. Stan Jones from Haines receives the Physician of the Year Award at the meeting.

NORTHERN HIGHLIGHTS — 20

SELECTED ABSTRACTS ON MEDICINE AND PUBLIC HEALTH IN THE NORTH

Tuberculosis in Eskimos:

Comstock, G. W.; Woolpert, S. F.; Baum, C.

Isoniazid prophylaxis among Alaskan Eskimos: A progress report. *Amer. Rev. Resp. Dis.* 110: 195-197, 1974.

This brief paper extends the follow-up observations on the well-known isoniazid prophylaxis trials in the Bethel area to some 15 years. The principal author is with the Johns Hopkins School of Hygiene and Public Health and the other authors either now or in the past were with the Center for Disease Control.

Two clinical trials of INH prophylaxis were followed up as of September 1973 — the double blind study initiated in 1957 and the follow-up study beginning in 1964 when all residents of the area were offered INH. Individuals could have received anywhere from 0% to 200% of the recommended dosage of INH (4-8 mg/kg daily for 1 year), depending on whether they had had placebo in the first trial and on the extent to which they took the prescribed medication. Cases were identified as those who developed bacteriologic evidence of tuberculosis during the observation period.

It was found that those who had taken placebo in the first trial had consistently higher case rates for active disease than those who had taken isoniazid. Overall, the isoniazid group had approximately twice the case rate of the placebo group. The findings are particularly striking when the comparison is made between those who took medication well in the first program but poorly in the second. Here the case rates for the placebo group were over 3 times those of the isoniazid group. These rates represent a reduction of 70% attributable to the isoniazid, an effect which has persisted for 15 years.

Those who took less than 40% of the annual recommended dose in the second program had the highest tuberculosis rates regardless of whether they were in the placebo or isoniazid group.

Among persons who took a fourth or less of the total recommended annual dose of isoniazid (in both programs combined), the nine-year case rates were over three times the rates of those who took one-half of the recommended dose. Taking more than half the recommended annual dose did not lessen the risk of active disease.

It is apparent that the effectiveness of isoniazid prophylaxis is long-lasting but continued observations of this study group are in order.

Horwitz, O.; Magnus, K.

Epidemiologic evaluation of chemoprophylaxis against tuberculosis. Twelve years follow-up of a community-wide controlled trial with special reference to the sampling method. *Amer. J. Epidemiol.* 99: 333-342, 1974.

This paper reviews the most recent follow-up data for the isoniazid prophylaxis trials carried out in Greenland beginning in 1956. The authors are with the Danish Institute of Clinical Epidemiology, Copenhagen.

A controlled double blind study of isoniazid

prophylaxis was carried out in 76 villages on the West Coast of Greenland. The villages were randomly divided into 2 groups and all the eligible inhabitants given either INH or a placebo. An intermittent low dosage regimen was used. The drug was administered for two 3-month periods, separated by 3 months. During the medication periods, participants took 2 200-mg tablets per day for 2 consecutive days each week, giving an average dose of 6-7 mg/kg of body weight per medication day. Participants were followed by annual chest films and routine medical care for illness.

The authors describe in considerable detail the "cluster" method of sampling, with its positive and negative aspects, in comparison with individual sampling. Eighteen clusters of about 400 persons each were identified. The average tuberculosis incidence rates for the medication villages was compared with those for the placebo villages, computed as the average rates for the clusters.

The analysis was based on 683 cases of pulmonary tuberculosis identified over a 12-year period. The incidence of active disease dropped markedly in both groups for the first six years and then the slopes of the curves leveled off. For the first 6 years the rate in the INH group was about one-third lower than in the placebo group. The effect was limited only to the bacillary cases. These findings might be consistent with the fact that a low dosage of medication was used.

Isoniazid prophylaxis as a public health measure must take into account the following factors: (1) the toxicity of the drug, (2) the overall incidence of the disease in the country, (3) the ease with which cases can be identified, and (4) the cost/benefit ratio of a prophylaxis program versus the traditional control program.

Wilson, J. M.; Galbraith, J. D.; Grzybowski, S.

Tuberculosis in Eskimo children. A comparison of disease in children vaccinated with *Bacillus Calmette-Guérin* and nonvaccinated children. *Amer. Rev. Resp. Dis.* 108: 559-64, 1973.

This paper compares the type and clinical course of tuberculosis in Canadian Eskimo children with or without previous vaccination with BCG. The authors are with the Department of Medicine of the University of British Columbia and the Department of National Health and Welfare.

The study included all cases of active tuberculosis diagnosed between 1958 and 1969 among Eskimo children living in Frobisher Bay, N.W.T. All cases either had positive identification of *M. tuberculosis* or a typical radiographic picture, with progression, and a positive tuberculin reaction. A total of 87 children were studied, some 43 of whom had had BCG vaccination, usually at birth, but in any case prior to the original diagnosis. There were no deaths in children from tuberculosis during the period of the study.

In comparing the clinical features of the disease in the two groups, it was found that over half the cases in both groups occurred in the first 5 years of life. The vaccinated group had a slightly higher percentage of bacteriologically positive cases. Primary pulmonary

continued on page 88

main purpose of drug information for the patient is to get his cooperation in following a drug regimen.

Preparation and distribution of patient drug information

We would hope to amass information from physicians, medical societies, the pharmaceutical industry and centers of medical learning. The ultimate responsibility for uniform labeling must, however, rest with the Food and Drug Administration. There is nothing wrong with this agency saying, "this information is generally agreed upon and therefore it should be used," as long as our process for getting the information is sound.

Distribution of the information is a problem. In great measure it would depend on the medication in question. For example, in the case of an injectable long-acting progestrone, we would think it mandatory to issue two separate leaflets—a short one for the patient to read before getting the first shot and a long one to take home in order to make a decision about continuing therapy. In this case, the information might be put directly on the package and not removable at all. But for a medication like an antihistamine this information might be issued separately, thus giving the physician the option of distribution. This could preserve the placebo use, etc.

It is in the distribution of patient information that the pharmacist may get involved. As professionals and members of the health-care team and as a most important source of drug information to patients, pharmacists should be responsible for keeping medical and drug records on patients. It is also logical that they should distribute drug information to them.

Realistic problems must be considered

We have to expect that the introduction of an information device will also create new problems. First, how can we communicate complex and sophisticated information to people of widely divergent socio-economic and ethnic groups? Second, what will we say? And third, how can we counteract the negative attitude of many physicians toward any outside influence or input? Hopefully the medical profession will respond by anticipating the problems and helping to solve them. Assuming we can also solve the difficulty of communicating information to diverse groups throughout the United States, our remaining task will be the inclusion of appropriate material.

What information is appropriate?

In my opinion, technical, chemical and such types of material should not be included. And there is

no point in the routine listing of side effects like nausea and vomiting which seem to apply to practically all drugs, unless it is common with the drug. However, serious side effects should be listed, as should information about a medication that is potentially risky for other reasons.

Other pertinent information might consist of drug interactions, the need for laboratory follow-up, and special storage requirements. What we want to include is information that will help increase patient compliance with the therapy.

Positive aspects of patient drug information

Labeling medication for the patient would accomplish a number of good things: the patient could be on the lookout for possible serious side effects; his compliance would increase through greater understanding; the physician would be a better source of information since he would be freer to use his time more effectively; other members of the health-care team would benefit through patient understanding and cooperation; and, finally, the physician-patient relationship would probably be enhanced by the greater understanding on the part of the patient of what the physician is doing for him.

Only the doctor can remove that fear by 20 or 30 minutes of conversation.

I'm not suggesting that we withhold any information from the patient because, first of all, it would be totally dishonest and secondly, it would defeat the very purpose of the insert. I do think that a patient on the birth control pill should know about the incidence of phlebothrombosis.

If you're going to tell a patient the incidence of serious adverse reactions, then you have to tell him that a concerned medical decision was made to use a particular medication in his situation after careful consideration of the incidence of complications or side effects.

Emotionally unstable patients pose a special problem

There are patients who, because of severe emotional problems, could not handle the information contained in a patient package insert. Yet if we are going to have a package insert at all, we just can't have two inserts. I think we might simply have to tell the families of these patients to remove the insert from the package.

Legal implications of the patient package insert

Just what effect would a pa-

tient package insert have on malpractice? We could try to avoid any legal implications by pointing out that the physician has selected a particular medication because, in his professional judgment, it is the treatment of choice. For instance, you can't tell everyone taking antihistamines not to work just because a few patients develop extreme drowsiness which can lead to accidents. And what about the very small incidence of aplastic anemia rarely associated with chloramphenicol? If, based on sensitivity studies and other criteria, we decide to employ this particular antibiotic, we do so in full knowledge of this serious potential side effect. It's not a simple problem.

How do we handle an insert for medication used for a placebo effect?

With rare exceptions, physicians no longer use medications for a placebo effect. This question does raise the issue of how a patient may react to receiving a medication without a package insert.

Preparation of the package insert

The development of the insert ought to be a joint operation between physicians, the pharmaceutical industry, the A.M.A. and the F.D.A.

I view the A.M.A.'s role as a coordinator or catalyst. It is the only organization through which the profession as a whole, irrespective of specialty, can speak. It has relatively instant access to all the medical expertise in this country. And it can bring that professional expertise together to ensure a better package insert. The A.M.A. can work in conjunction with the industry that has produced the product and which is ultimately going to supply the insert.

I don't think we should rely, or expect to rely, on legislative committees and their nonprofessional staffs to make these decisions when it is perfectly within the power of the two groups to resolve the issues in the very best American tradition—without the government forcing us to do it. I think the F.D.A. has to be involved, but I'd like them to become involved because they were asked to become involved.

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tuberculosis accounted for about 80% of total cases in both the vaccinated and nonvaccinated groups. The lesions of chronic pulmonary tuberculosis, as predicted, occurred largely in the older children.

About two-thirds of all cases were discovered by routine radiographic surveys and about 10% of others came to light as a result of contact investigations.

Complications were recorded in over 25% of the children, the most frequent one being phlyctenular keratoconjunctivitis in the BCG vaccinated group. Cervical adenitis was seen in 6 patients, 4 of whom had had the vaccine. There was one case of miliary tuberculosis in each group, but no cases of tuberculous meningitis were observed.

The conclusion drawn from the study was that the clinical picture and course of tuberculosis in these children was essentially the same whether vaccinated or not.

Eidus, L.; Hodgkin, M. M.; Schaefer, O.; Jessamine, A. G.

Distribution of isoniazid inactivators determined in Eskimos and Canadian college students by a urine test. *Rev. Can. Biol.* 33: 117-123, 1974.

This paper describes a method for detecting slow and rapid isoniazid inactivators by the use of a urine test. The test was then applied to compare the pattern of isoniazid inactivation among a group of Eskimos and a group of college students. The study is reported from the Laboratory Centre for Disease Control, Department of National Health and Welfare.

The urine test developed by the author's laboratory was employed in studying 102 college students from Ottawa and 112 Eskimos from the Coppermine area, N.W.T.

The method involves an oral test dose of 10 mg of isoniazid/kg of body weight, followed by the collection of a urine specimen 6 hours later. By a chemical method the acetylisoniazid and the free isoniazid concentrations are measured and expressed as a ratio: the inactivation index, or I.I.

Among the students, 58.8% were slow acetylators, whereas among the Eskimos, 93.7% were fast acetylators. Although the slow acetylators from the two groups were similar to each other, the fast acetylators showed greater variation, with the Eskimos showing a mean I.I. of 17.39 and the students a mean I.I. of 9.45.

The fast acetylators had a bimodal distribution curve in both groups, and the authors conclude that in reality there are two valid subgroups designated "intermediate" (moderately fast) and "fast" acetylators, with a demarcation I.I. of about 13.

Eidus, L.; Pollak, B.; Karagoz, A.; Hodgkin, M. M.

La chimiothérapie intermittente de la tuberculose: Une étude des problèmes impliqués et compte rendu des contributions faites récemment au Canada. *Union Méd. Can.* 103: 1271-74, 1974.

This paper discusses intermittent chemotherapy for tuberculosis with special reference to the problem of rapid isoniazid inactivators. The principal author is with the Laboratory of the Centre for Disease Control, Department of National Health and Welfare, Ottawa.

The incidence of tuberculosis among Canadian Eskimos is noted to be some 40 times that of the white population of the country. In recent years intermittent chemotherapy, with careful surveillance of actual drug

ingestion, has been found to be a valuable method for the ambulatory treatment of tuberculosis. Intermittent therapy on a once-weekly basis would be ideal for Indians and Eskimos in isolated areas, but unfortunately this method, using conventional drugs, is not desirable for those who are rapid isoniazid inactivators, as most Indians and Eskimos are.

Recent advances in laboratory technique (see above) have led to a method for determining whether an individual is a slow, intermediate, or fast inactivator. Since nearly all Canadian Eskimos are known to be rapid inactivators, chemotherapy with isoniazid, whether on a daily or weekly basis, is probably less than fully effective.

Accordingly, the National Reference Center for Tuberculosis has assisted in the development of a slow release form of isoniazid-Matrix (known as Isozide® — SA, ICN Canada Ltd.). Two clinical studies have been performed using this preparation, one at the Charles Camstell hospital in Edmonton and the other at Ste Agathe des Monts, Quebec. These studies have confirmed that the Matrix preparation is absorbed more slowly than regular isoniazid. With rapid inactivators, the rate of recovery of isoniazid after an experimental dose was 29%, compared with a rate of between 48 and 53% for regular isoniazid. The Matrix preparation, therefore, prolongs the therapeutic effect of isoniazid in rapid inactivators. A triple dose of Matrix isoniazid (45 mg/kg) in the rapid inactivators led to blood levels comparable to those produced by 15 mg/kg of ordinary isoniazid. It is surmised on the basis of these studies that the Matrix preparation in appropriate doses will be as effective for intermittent therapy in rapid inactivators as the regular preparation for slow inactivators.

Clinical trials using this preparation in the actual treatment of patients are needed. If successful, this preparation could substantially cut down on long and costly hospitalizations among the Eskimos and Indians.

Persson, I.; Viskum, K.; Gilberg, Aa.; and Gessain, R.

ABO blood groups and tuberculosis in North and East Greenlanders. *Scand. J. Resp. Dis.* 55: 162-165, 1974.

This paper investigates the correlation between bacillary and abacillary tuberculosis and the ABO blood group distribution in North and East Greenland Eskimos. The authors are with the Bispebjerg Hospital, Copenhagen, and Musee de L'Homme, Paris.

In 1960, tuberculosis rates in Greenland were some 35 times those in Denmark. Between 1950 and 1968, 95% of North and East Greenlanders were surveyed radiologically. A total of 231 cases of tuberculosis were found, 55 of them abacillary. About 90% of those over 15 years of age were blood grouped.

No statistically significant differences were found when all cases of tuberculosis were compared with the whole population, either in North or East Greenlanders. Among the patients with bacilli there was a tendency toward an excess of blood group O cases and a relative deficiency of group A cases, at least in the East Greenlanders, but these findings were not statistically significant. In this population there was a significant difference between bacillary patients and patients without bacilli among those of A blood type.

The O blood type is especially common (80%) among the North Greenlandic Eskimos, while the comparable figure among East Greenlanders is only 25%. In the East Greenlandic Eskimos, bacillary tuberculosis afflicts patients with Group O more often than expected and those of Group A less often than expected. The distribution of abacillary cases is normal. □

—Robert Fortune, M.D.



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ALASKA MEDICINE

Official Journal of the Alaska State Medical Association

Official Journal of the Alaska Dental Society

1135 Eighth Avenue, Suite 6, Anchorage, Alaska 99501



Volume 17

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ORIGINAL ARTICLE

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CREATION OF MAN was inspired by a paragraph out of the journal of William F. Doty, teacher of government school, Gambell, St. Lawrence Island, August 14, 1898 to July 12, 1899.

"Tossing with a blanket followed. The important functionaries giving the first exhibition. It was a rather difficult performance to alight on one's feet after a toss in the air for 12 feet; but many of the men and women and even some children succeeded in this feat

"I do not know the import of the celebration. In connection with the blanket performance, I was given to understand that it symbolized the creation of mankind. So it would appear that the people believe that their ancestors descended from the clouds."

Rie Munoz
August 1975

Reproductions of the painting are available through Artique, Ltd., 314 G Street, Anchorage, AK 99501. Original painting owned by Jean Shadrach. (Price: Thirty-five dollars (\$35.00) prepaid)

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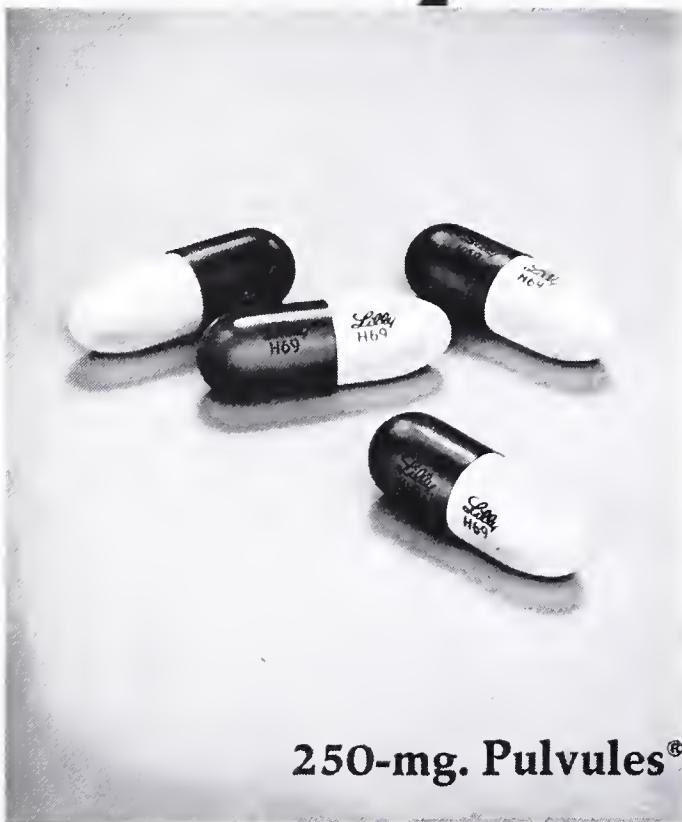
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OUTPATIENT TREATMENT OF SPONTANEOUS PNEUMOTHORAX

A. von Hippel, M.D.

From December 1973 to April 1975, twelve patients had closed thoracostomy in the Providence Hospital Emergency Room for progressive moderate to major (or tension) spontaneous pneumothorax. A similar number seen with stable minor to moderate pneumothorax were treated by observation or needle aspiration.

Two of twelve patients undergoing chest tube insertion were admitted to the hospital: one directly to the operating room for surgery of recurrent tension pneumothorax, the other (an elderly attorney) for treatment of associated conditions. Nine of ten remaining patients were sent home within one to two hours of chest tube insertion. The first patient of this series was admitted overnight before being discharged to care for his own chest bottle. (Table 1)

Prior to discharge each patient had a chest roentgenogram which demonstrated satisfactory tube position and lung expansion. Each patient (and any interested relative) was given brief instruction on the principles of chest drainage and sent to the hospital coffee shop as a trial expedition prior to leaving hospital. Persistent air leak eventually led to the admission of three patients (for wedge resection of bleb with pleural abrasion) 7, 11, and 14 days after tube insertion. One other of these closed thoracostomy patients was admitted to surgery for recurrent pneumothorax, a month following resolution of the initial pneumothorax.

Dr. von Hippel is in private practice at 3300 Providence Drive, Anchorage, AK 99504.

MATERIALS AND METHODS

A. For Needle Aspiration Of Air

Materials

1. Betadyne solution
2. 5 cc of 1% plain xylocaine (in 5 or 10 cc syringe with short #25 needle and 1½" #23 needle)
3. Current PA roentgenogram of chest (taken within past hour or two)
4. Sterile gloves
5. #14 or #16 intravenous needle with plastic outer cannula and inner metal needle
6. #11 blade and handle (optional)

Method: Evaluate the history and x-ray. Minor pneumothorax can be assumed stable if the episode of chest pain was 48 hours ago, but leak is most likely still in progress if the episode was 15 minutes ago. A minor stable pneumothorax need not be aspirated unless symptomatic, or if air travel or mountain climbing is proposed (lower atmospheric pressure will cause enlargement of any undrained air pocket).

If the air leak has likely ceased, and if the volume of air warrants removal, raise an intradermal wheal over the upper border of the 3rd rib at the midclavicular line with the patient semi-recumbent. The skin wheal is painless if xylocaine is injected slowly with the needle bevel down, and it identifies site for further needling. Periosteum and pleura, the other pain sensitive areas of chest wall, can be blocked with multiple short needle passes into the upper rib

border, and then 2-4 mm past this, while constantly injecting 1% xylocaine. To confirm the proper location, before syringe and needle are withdrawn, air is aspirated into syringe from pleural space.

Now put on gloves and insert an open #14 needle along same track (2nd interspace). Insertion may be easier if the skin first punctured with a #11 blade. Remove the metal needle from plastic cannula (or at least withdraw needle tip back into plastic if heavy muscle is likely to kink the unsupported plastic) and tell the patient, "Bear down a little bit, please." Air will hiss out of the plastic tube. Place a gloved fingertip over needle hub whenever patient relaxes or breathes normally, to prevent air entry.

Such gentle Valsalva maneuvers, alternating with intervals of finger occlusion of the hub, soon remove all possible air (unless leak persists). Hissing will become intermittent, then cease, as the expanding lung occludes the plastic cannula tip. The open cannula is withdrawn slowly during a gentle Valsalva maneuver and the patient sent to the coffee shop.

Repeat chest roentgenogram in 1-2 hours should show less free intrapleural air than before the tap, but it is unusual to obtain complete expansion. Expiratory films make free air more obvious, so take follow-up films with original technique and position. Improvement should continue on roentgenograms over subsequent days. An occasional minor pneumothorax will reaccumulate only to the original levels, suggesting a leak that ceases with slight lung compression. This usually seals and the lung gradually expands without further therapy.

Needle aspiration has been uniformly successful in appropriately selected patients. Increasing pneumothorax however, is an indication for a chest tube.

B. For Closed Thoracostomy

Materials: Betadine, syringe, needles, gloves and xylocaine as above (except may require 10 cc 1% xylocaine); plus #10 knife blade and handle, two large hemostats, #28 Argyle chest tube, 2-0 monofilament suture swaged on skin needle, scissors, needle holder, tincture of benzoin, 4" x 4" gauze pads, 1" cloth adhesive tape, Bentley PDS-100 chest drainage bottle and tubing, and 200 cc saline.

Method: Same steps as in needle aspiration until the anesthetic injected and air aspirated from the chest. The skin then incised transversely within wheal until the fat is exposed. The tip of the hemostat is forced into chest with a to-and-fro-rotatory motion to develop a tube track. The tube tip is beveled, then grasped in

hemostat and driven into the anterolateral apical position and advanced the proper distance to keep all side holes well inside the pleura, avoiding tube impingement on vital structures such as the brachial plexus, aorta or esophagus. The tube is secured with a skin suture and dressing. Saline is poured into the air vent of a Bentley Bottle until the fluid level reaches the top of the skirt at base of unit (about 200 cc). (If the bottle is accidentally overfilled, merely invert unit and excess fluid will drain out the air vent, leaving the proper amount for water seal.) Replace the dust cap on the air vent and connect chest tube to a sterile tubing connector.

Once the chest tube is inserted, air will rush in and out with respiration. This should not seriously discommode patient. In fact he may be markedly relieved by decompression of his tension pneumothorax, so there is no need for great haste in connecting tube to a one-way water-seal system.

Patient is instructed to cough while bubbling is observed with the bottle on floor. Successful lung reexpansion is signalled by spasmodic cough, pleural pain and often copious expectoration, and confirmed by roentgenogram. The patient is directed to the coffee shop after instruction. An occasional patient has preferred to rest flat on his back for a few minutes first. Once stable and relatively comfortable, the patient is permitted to leave the hospital (usually within hour or so of tube insertion).

Discharge Instructions are:

1. No smoking!
2. Leave bottle on or near floor so water seal fluid not lifted into chest.
3. Observe occasionally for bubbling.
4. Keep bottle upright (no harm if it falls over, merely return to functional position).
5. Call doctor daily and give status report.
6. Return to hospital emergency room for any significant problems.
7. Expect some pinkish or red drainage when lung expands fully and no longer leaking (several patients called to report this "hemorrhage").
8. Make appointment for chest tube removal the day after #7.
9. Resume activities as desired (one bartender found it a conversation piece).
10. Pour two or three teaspoons of table salt into air vent if staying outside in freezing weather.
11. Take no pain medication if planning to drive.

The patients were each given a prescription for ten or twenty Empirin® #3 or #4 and rarely some Valium®, but usually no oral or injected

Table 1

SUMMARY OF PATIENTS TREATED AS OUTPATIENTS FOR PNEUMOTHORAX.

Patient	Age	Chest Tube In	Leak Before	Leak Since	Surgery
B.P.	38	11 days	0	0	after 11 days leak
D.S.	50	17 days	0	0	0
N.L.	28	2 days	yes	0	0
R.D.	20	3 days	0	yes	for recurrence 1 month later
J.H.	32	3 days	yes	0	0
C.C.	44	7 days	yes	0	after 7 days leak
D.B.	50	14 days	0	0	after 14 days leak
G.A.	30	3 days	0	0	0
D.T.	27	8 days	0	0	0
C.S.	46	5 days	0	0	0

medicine before discharge. Some insisted on driving themselves home, although a ride was recommended or occasionally provided.

Tube removal was performed during a mild Valsalva maneuver after the suture was divided and the tape loosened from the skin. A previously prepared Vaseline gauze-Neosporin® ointment, 4" x 4" gauze-backed dressing was immediately applied. This dressing was taped securely in place for 48 hours. It was then removed and the patient allowed to clean the small wound during a regular bath or shower, and instructed to keep tube site uncovered and dry, or to make a few applications of Neosporin® ointment if wound is not completely satisfactory.

DISCUSSION

No antibiotics were used and there were no complications attributable to home care of the chest drainage system. The only three complications were persistent air leak requiring surgery, as noted above. On the plus side, compared to in-hospital treatment, the chest bottle never got emptied by mistake, the tubing never got clamped, there were no medication errors or midnight calls to report slight changes in bubble size or shape, and no patient fell out of bed or filed suit.

All patients were surprised and grateful that home chest tube care was possible. Total medical costs ranged \$150 to \$250 unless thoracotomy followed. If, as seems apparent, the course of healing following closed thoracostomy is unchanged by outpatient care, an average of more than seven in-hospital days was avoided for each patient: a saving of over \$1,000.00 if in a

ward bed, or over \$2,000.00 if an ICU bed. (An identical prior pneumothorax in the ICU of another institution cost one of these patients several thousand dollars and much mental anguish.)

Other advantages of ambulatory chest tube care were some relief of the hospital bed shortage, continued care for children at home, reduced surgeon frustration with persistent air leak, marked reduction in use of analgesics and sedatives, and avoidance of complications and recovery delays secondary to inactivity.

CONCLUSIONS

Self care at home with a simple, stable, unbreakable water seal chest drainage system is practical for most patients requiring closed thoracostomy after spontaneous pneumothorax.

BOOK REVIEW

Common Duct Stones by Frank Glenn, M.D. Charles C Thomas, Publishers, 1975. \$11.50.

The small monograph on common duct stones is written by Frank Glenn who is a world recognized authority on this problem. The first half of the book represents a history of study and treatment of common duct problems and while of interest provides little that is helpful for the clinician in managing problems of common duct calculi. The remaining discussion of technique of common duct surgery adds very little to the information already available to the adequately trained general surgeon. The use of operative manometry which is widely used in Europe as an adjunct to accurate common duct surgery is not described. The use of non-operative cannulation of the common duct through the T-tube tract for retained common duct stones is mentioned briefly but not discussed in depth. I do not feel that this volume will keep the biliary surgeon out of many mouse traps which he would otherwise fall into.□

Theodore Shohl, M.D.



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THE HUMANIST AS PHYSICIAN

Reflections on the Centenary of Albert Schweitzer's Birth

Robert Fortune, M.D.

I. INTRODUCTION

Just a decade has passed since the remains of Albert Schweitzer were laid to rest in a simple grave near the banks of the Ogowe River in equatorial Africa. This extraordinary man fell victim to a stroke in his 91st year,¹ after a lifetime of achievement rarely approached in human history. Despite the measure of fame he attained as a theologian, ethical philosopher, musicologist and performing artist, his most enduring monument, he would have insisted, was all around him at his death—L'Hôpital Schweitzer, a rambling jungle community which had served as a citadel for human kindness for over half a century.

This hospital, like nearly everything to which Schweitzer put his hand and mind, was steeped in controversy. It has been bitterly criticised, especially by physicians, for its lack of sanitation and modern equipment, despite the fact that Schweitzer, in his later years at least, had access to almost unlimited funds to support his work. Other critics have included many young African nationalists, especially from countries other than Gabon, who were quick to condemn the old man in the white pith helmet as a relic of the hated age of European colonialism. His well-known ethic of "Reverence for Life" has been dismissed by not a few as little more than a naive slogan which is supposed to prevent one from killing a cockroach running

across the kitchen table, or from pulling out the weeds which are choking the vegetable garden. Conservative Christians are dismayed by his theological studies and many musicians disagree with his controversial interpretations of the life and work of J. S. Bach.

Indeed, it seems as if no one can be simply indifferent to a man like Albert Schweitzer, since nearly everything he did flew in the face of accepted doctrine or conventional wisdom.

Though Schweitzer had many dimensions, he seems least appreciated as a physician, the work he chose with calm deliberation rather late in life. Perhaps it is appropriate, one hundred years after his birth, to examine briefly the life and thought of Albert Schweitzer as a man of medicine. After all, it was in fact his work in this field which raised him to international renown from the unspectacular life of a German theologian with a talent for music.

II. THE HUMANIST AS PHYSICIAN

1. *The Years of Preparation (1875-1913)*

Albert Schweitzer was a pastor's son, born January 14, 1875, in the tiny Upper Alsatian village of Kaysersberg. The family shortly thereafter moved to Günsbach, where he grew up in a happy and stable home.

At the Gymnasium at Mühlhausen, Schweitzer showed a talent for music and began his training on the organ under Eugène Münch. His interests focused also on history and the natural sciences. Though he later described himself as an indifferent scholar at this period,² it is apparent

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that he took his studies seriously and read voraciously. He found science especially stimulating, though he felt that the textbooks then in use were seriously deficient. "Their confident explanations," he wrote many years later, "tailored to be learned by heart . . . by no means satisfied me."³

In October 1893, Schweitzer entered the University of Strassburg, where he registered in both the theological and philosophical faculties. During military maneuvers the following spring, he took along a Greek New Testament and there first developed his views on the life of Jesus, which he later developed in his major theological writings.

His theological thesis, prepared in 1897, was on the meaning of the Last Supper. After his examinations in theology the following year, he devoted his efforts to philosophy, especially the ethical teachings of Immanuel Kant. Nor was his musical training neglected during those years, as he studied the organ with Ernest Münch in Strassburg and Charles Marie Widor in Paris. His doctorate in philosophy was awarded at Strassburg in July 1899.

Immediately thereafter he began preparing for his Licentiate in Theology degree, and meanwhile began to preach, first as a Deacon and later as a Curate, at St. Nicholas Church. He earned his theological degree in July of 1900. Three years later, as a 28-year-old Privat Dozent, he was appointed Principal of the Theological College at Strassburg.

These years were ones of intense scholarly and literary activity. After preparing both his philosophical and theological theses for publication, he had undertaken a detailed study of the life and work of J. S. Bach, which first appeared in French in 1905 and which he later greatly expanded in a German edition of 1908. His theological studies were concentrated in a critical review of the writings on the life of Jesus and resulted in a major work first published in 1906 and later translated under the title *Quest of the Historical Jesus*. That same year, he also published a treatise on French and German organ building.

As a child and later as a university student, Schweitzer had been troubled by the fact that many people around him, by virtue of their ill health or material circumstances, were unable to find the happiness of a productive life such as he had enjoyed. He was lying in bed on a beautiful spring morning in 1896 when he was struck with the thought that he must not accept this happiness as a matter of course, but must give something in return for it. Before getting up, he had settled with himself ". . . that I would consider myself justified, until my thirtieth year, to live

for scholarship and art, in order to devote myself, from that time on, to an immediate form of human service."⁴ Eight years later, in the fall of 1904, he chanced across a copy of the Paris Missionary Society magazine which described the needs of their Congo mission and appealed for workers in the province of Gabon. The decision was made. A year later, true to his pledge, Schweitzer wrote his parents and close friends telling them of his decision to study medicine and go to Africa. The reactions were varied, but most were critical. What hurt him the most were the opinions of "those who passed for Christians" who failed to comprehend that the teachings of Jesus could "sweep a man from his present course of life."⁵

He began his medical studies in late October 1905 at Strassburg. He relates that when he registered as a medical student the Dean proposed that he should be handed over to the Department of Psychiatry for evaluation.⁶

The preclinical studies of that period included anatomy, physiology, chemistry, physics, zoology and botany. Schweitzer entered these unfamiliar realms with his usual elan, but he found the going difficult, especially since at the same time he tried to continue his full teaching and preaching load, as well as his original researches in music and theology. For the theologian and philosopher, usually quite at home in the airy realms of speculation, it was satisfying to "feel the firm ground of reality under my feet."⁷ To be forced to support all his conclusions with hard, verifiable facts, he felt, was an important step in his intellectual development.

In May 1908, Schweitzer passed his basic sciences examination, though he conceded the material did not come easily for him. Stubborn to the end, he had refused to join a "cramming" club of fellow-students until only a few weeks before the examinations.

The clinical years proved somewhat less of a strain. Among his well-known teachers were Chiari in pathology, and Schmiedeberg in pharmacology. In this latter area especially, he maintained a particular interest throughout his life. Schweitzer took satisfaction in being able to render a special service to Prof. Schmiedeberg in later years, when in the social upheaval in Alsace after the First World War he was able to rescue the old man's important manuscript on digitalis from confiscation by the French authorities.

He took the State Medical Examination in October 1911, having earned the fee the previous week by playing the organ at a musical festival in Munich. When it was all over in mid-December, one of his professors remarked that it was only his exceptionally good health that carried him through this ordeal.⁸

Schweitzer now had to spend a year as a hospital volunteer and prepare a thesis before gaining his final qualifications in medicine. He began his hospital work at Strassburg and later transferred to Paris for an intensive course in tropical medicine, where he also began collecting medical supplies and equipment for later shipment to Africa. Medical supply catalogues were dull reading for a scholar of his stature, but he confessed in later years that he even gained a measure of artistic satisfaction in doing such a job well.⁹ Also that year, he supplemented the income he could raise from organ recitals by the distasteful task of soliciting funds for his work in Africa from his friends and acquaintances.

In June 1912, Schweitzer married Hélène Bresslau, the daughter of a noted historian at Strassburg. They had known each other for several years, and together had evolved the plans for the work in Africa. Although initially trained as a social worker, Hélène now began to prepare herself as a nurse so that she could assist with the medical duties. Their marriage—a Christian theologian and medical missionary with a Jewish girl—lasted 45 years until her death in 1957.

A difficult task still remained undone—the preparation of a medical thesis. Schweitzer chose an unusual topic, but one for which he was uniquely qualified. Possibly the medical faculty was indulgent in view of the uncommon candidate before them.

Schweitzer's subject was a critical analysis of three recent monographs which purported to show that Jesus suffered a mental derangement. He set out to demonstrate, in the light of modern theological and psychiatric thought, that this hypothesis was totally untenable. This work, a slender treatise of 46 pages, was later published and translated into English under the title *The Psychiatric Study of Jesus*. It cost him nearly a year of intense effort, since he found it necessary to immerse himself in the "boundless problem of paranoia," in the psychiatric literature of the day. More than once he resolved to throw it aside for an easier subject. At best, it was a touchy one for a man of Schweitzer's background, but he undertook the task as a quest for truth, wherever it might lead him. "Should it really turn out," he wrote, "that Jesus' object world must be considered by the doctor as in some degree the world of a sick man, still this conclusion, regardless of the consequences that follow from it . . . must not remain unuttered . . ."¹⁰ In fact, however, Schweitzer was able to demolish the arguments of the three psychiatrists effectively, by showing that their facts as well as their reasoning were in error.

Despite the demands of his thesis and medi-

cal activities, he found time "through heavy claims on my nights' rest,"¹¹ as he states, to complete a detailed study of the thought-world of St. Paul, to revise and enlarge the *Quest of the Historical Jesus*, and to prepare a multi-volume edition, together with Widor, of Bach's Preludes and Fugues for the organ. He nearly completed a second major work on St. Paul, but preparations for his final medical examinations prevented the finishing touches before he departed for Africa.

When everything was nearly ready, Schweitzer approached the Paris Missionary Society to offer his services in Africa at no expense to them. But it was not that simple. Some of the more conservative Board members had serious doubts about his Christian orthodoxy and feared he would confuse the Africans and the missionaries already in the field. By personal visits to the homes of the Committee members, however, Schweitzer was finally able to convince a majority that it was his purpose to practice medicine, not preach. On theological matters he would be "mute as a carp."¹²

After a last minute problem with his German medical diploma in a French colony, Schweitzer and his wife finally departed for Africa in February 1913. He was thirty-eight years old.

2. *The Years of Building (1913-1949)*

Lambaréné lies on the Ogowe River just north of the Equator in what is now the Republic of Gabon, but which in 1913 was the northern province of French Equatorial Africa. The beginnings of the medical work were not auspicious. The sick and disabled began to line up even before the supplies and instruments could be unpacked. The promised clinic building was not even under construction when the Schweitzers arrived and work was therefore begun first under the broiling, open sun and later in a former henhouse.

Schweitzer soon engaged the services of a black helper named Joseph, who remained for many years, sometimes lightening the work and sometimes lightening the mood with his original use of anatomical terminology.¹³

Clinic hours were initially established from 8:30 a.m. to 12:30 p.m. and again from 2:00 p.m. to about 6:00, at which time it was necessary to quit because of the danger of night-biting mosquitoes attracted by the lantern. An average of 30-40 patients were seen each day, with Mrs. Schweitzer assisting in surgical procedures and dispensing the drugs.

The commonest problems seen were skin diseases, especially phagedenic ulcers and scabies. The latter condition caused great dis-

comfort but lent itself to fairly easy and effective treatment with sulfur ointment. News of a few cures soon became known throughout the surrounding forest, and patients with high expectations began arriving from far and near.¹⁴

Many of the patients were suffering from multiple illnesses, including the dread mosquito-borne parasitic diseases of the tropics, such as filariasis with elephantiasis, and, of course, malaria. Leprosy, pneumonia, amebic dysentery, urinary tract infections, framboesia and osteomyelitis were also common and debilitating conditions.

Other chronic diseases were widespread. Schweitzer was particularly impressed with the amount of heart disease he saw, and found good results in treating it with the new "French method" of using digitalis on a long-term basis. Mental disorders were also a problem, especially since such victims were cruelly treated in the villages, yet there were no facilities for treating them at the mission either without serious disruption of the medical work.

Accidents and injuries added their share of misery. Many were injured in the lumbering camps along the river. Men attacked by wild animals, especially gorillas and leopards, were commonly brought to the hospital. A few were victims of a secret society whose members carried out grisly assaults, while dressed in leopard skins equipped with steel claws.

But it was African sleeping-sickness, or trypanosomiasis, which was the cause of the greatest suffering among the wretched people of the country. The tsetse fly was widespread, and in fact was causing an epidemic of this disease among man and his domestic animals during the period of Schweitzer's early years in Africa. In one village on the Ogowe the population had been reduced from 2,000 to 500 over a two-year period from the ravages of this disease. Since nearly all patients who came to the hospital had a fever of some type, it was necessary for the doctor to spend long and valuable hours examining blood smears under the microscope to establish or rule out the presence of trypanosomes, especially since the only drug available for treatment at that time was Atoxyl, an extremely dangerous chemical noted for its instability, toxic side effects and low margin of safety.

Not surprisingly, many of the native people looked upon Schweitzer as a fetishman—one who could cause as well as cure disease. The prescribed medications were sometimes kept as charms. Not infrequently the patients drilled holes in the pills and wore a string of them as a necklace. Ointments might be eaten and powders rubbed into the skin.¹⁵ In later years, Schweitzer evolved a kind of "unit dose" sys-

tem, in which the staff insisted that the patient take the medication in the proper manner on the spot. This method saved on the drug costs, and also solved the problem of dispensing containers, which were always in short supply.

Schweitzer also did a substantial amount of surgery, with his wife acting either as anesthetist or as scrub nurse. Although he referred once to his "very modest surgical skill,"¹⁶ his results were quite good, particularly among the many cases of chronic and often obstructed hernia. In fact, his successes in surgery did much to enhance the early reputation of the hospital among the natives, who thought he killed his patients, cured them, and then raised them from the dead. This was far more than the local witch doctors were prepared to offer.

Within a few weeks of his arrival in Africa, Schweitzer set about the construction of a more suitable building for the medical work. By December of the first year he had raised, largely by his own labor, a barracks-type building with a corrugated iron roof to house his consultation room, operating room, and pharmacy. Bamboo huts were built nearby as wards for about 40 patients and their attendants. Beds were made of rough hewn posts and poles, covered with dried grass. Patients brought their own cooking utensils, blankets and mosquito netting. The patient's family slept nearby, cooked for him, and when he was discharged, paddled him home again. This system, born of necessity, was found to be practical and effective and became the foundation of the "clinical community" which became so important in later years in maintaining the trust and confidence of the natives.

Though he found time to keep up some of his musical skills on a zinc-lined piano and to write and even preach a little (upon the request of the missionaries), his medical responsibilities weighed heavily upon him. He found great inner satisfaction, however, in doing the work he had felt called to do:

But what significance do all these transient worries have compared with the joy of being here, working and helping?" [he wrote] . . . "just to see the joy of those who are plagued with abscessed feet, when these have been cleanly bandaged up and they no longer have to drag their poor bleeding feet through the mud, makes it worth working here!¹⁷

Upon the outbreak of World War I, the Schweitzers, as German nationals in a French colony, were placed under house arrest and prevented from carrying on their medical work. Although later permitted to return to his clinical duties, the doctor was constantly under surveillance from the French authorities. Finally, in September 1917, the Schweitzers were arrested

again and this time taken to southern France, where they were interned for the remainder of the war. The jungle hospital was left to rot, with the forest people as innocent victims of the senselessness of war.

While in the prison camp in the Pyrénées, and later in Provence, Schweitzer served as camp physician, using the few drugs and instruments he had been able to bring with him from Lambaréné.

His own health was beginning to fail, however, from the years of exhausting toil. While still in Africa he had suffered from "tropical anemia" and painful dental problems. While at Bordeaux, en route to the prison camp, Schweitzer developed a severe case of amebic dysentery which plagued him for years afterward, finally resulting in an operation, presumably for amebic liver abscess, in September 1918, and another in the summer of 1919.

Finally in July 1918, the Schweitzers were repatriated to Alsace via Switzerland. After he had recovered his shattered health somewhat, he was offered the post of physician at the municipal hospital in Strassburg, where he supervised the women's wards until April 1921.

He tried to take up once more the threads of his old literary work, yet he found much of the spark gone. A bout of depression at this period was cause for serious concern among his family and friends.¹⁸ The turning point seemed to be an invitation to give a series of lectures and concerts at the University in Uppsala, Sweden in the late spring of 1920. Though he went there a "tired, depressed, and still ailing man" the kindness with which he was everywhere received did much to restore his self-confidence.¹⁹

Before long he was lecturing and giving recitals all over Europe. His extensive writings of this period included an autobiographical book on Africa, the first two volumes of his *Philosophy of Civilization*, which he had begun in 1914, and a treatise on Christianity and the religions of the world. Encouraged by these successes, he decided to return to Africa to take up his medical work once more. This was made possible by the funds he received from concerts, lectures, book royalties and contributions from all over Europe.

In the interval between packing supplies for Africa, Schweitzer wrote one of his most charming yet revealing works, *Memoirs of Childhood and Youth*, a little book which grew out of a visit in the summer of 1923 to Dr. O. Pfister, a Swiss psychoanalyst. The latter, Schweitzer recalls, "gave me an opportunity to stretch out my tired body. But at the same time he invited me to narrate to him, just as they came into my mind, some incidents from my child-

hood . . ." ²⁰ Dr. Pfister presented the typed transcript of these reminiscences to Schweitzer who reworked it somewhat into the form in which it was later published. Marshall and Poling, in their recent biography of Schweitzer, state that he was actually undergoing psychiatric treatment at this time, and feel that more people should view this little book as a psychiatric study of Schweitzer.

He departed for Africa again on February 14, 1924, this time leaving his wife and five-year-old daughter Rhena behind in Europe. It was a sad disappointment to see the decay into which the compound at Lambaréné had fallen. Only one delapidated building remained at the old hospital site. Schweitzer and Noel Gillespie, a young Oxford student he had brought from Europe, immediately set about the back-breaking task of rebuilding. Materials were hard to obtain, despite their cajoling, pleading and outright threats to the natives. The latter only laughed in disbelief when Schweitzer told them he would not treat people from their village at his new hospital if they didn't lend assistance.

The medical work grew rapidly again, once the word passed through the forest that "le grand docteur" had returned. For the first few months, Schweitzer held clinic only in the mornings, the afternoons being devoted to building. Later he found the load simply overwhelming and requested additional volunteer doctors and nurses from Europe. The hospital was finally ready for occupancy in the fall of 1925.

Two unexpected events foiled these efforts, however, a severe famine in the region and, probably not unrelated, a terrible epidemic of dysentery which struck down many in their weakened state. The epidemic brought the daily census of the hospital to nearly 150, most of them needing isolation. In addition, the increasing need for accommodations for mental patients led Schweitzer to decide, with a heavy heart, that the new hospital would not serve the purpose and that it must be relocated and enlarged.

He was able to acquire a suitable site approximately two miles further up the river, one which had ample building space, good drainage, and allowed room for gardens, orchards, and domestic animals. The famine and war experiences had demonstrated clearly that the hospital must be made as self-sufficient as possible.

Schweitzer devoted nearly all his time and energy over the next two years to the tasks of architecture, masonry and carpentry, turning over essentially all the medical work to his assistants. He designed the buildings in an original manner to afford the maximum protection against the sun, rain, and humidity, while taking

(continued on page 99)

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Overdosage: Keep the medication out of the reach of children since accidental overdosage may cause severe, even fatal, respiratory depression. Signs of overdosage include flushing, hyperthermia, tachycardia, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils and respiratory depression which may occur 12 to 30 hours after overdose. Evacuate stomach by lavage, establish a patent airway and, when necessary, assist respiration mechanically. A narcotic antagonist may be used in severe respiratory depression. Observation should extend over at least 48 hours.

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advantage of natural shade and prevailing breezes. A number of these buildings still stand at L'Hôpital Schweitzer today.

The new hospital opened in January 1927, amid great rejoicing on the part of patients and staff alike. The spacious and airy buildings could now accommodate some 200 patients and their attendants.

The pattern of Schweitzer's life over the next dozen years included five more sojourns in Africa, interspersed with visits to Europe, the latter less for rest and relaxation than to fulfill some of the heavy demands made on him in his "other life" as a theologian, philosopher and musician.

The publication in 1931 of his well-known autobiography, *Out of my Life and Thought*, greatly expanded his reputation both in Europe and America. Other books from these years took as their subjects the mysticism of St. Paul, the world thought of the Indian philosophers, and more narratives of his hospital experiences in Africa.

Beginning with his third sojourn in 1929, Schweitzer again spent more and more of his time in Africa in medical activities. Although a steady stream of physicians, nurses, and technicians assisted with the work, the old man himself (he was already 54) was clearly in charge, holding clinics, assisting at surgery, preparing prescriptions and making rounds on the wards day and night. He took a deep personal interest in everything which went on, whether clinical or administrative. Though often accused by his critics of being short-tempered, autocratic and arbitrary, all of which he undoubtedly was at times, he knew exactly what he wanted done and was impatient to see things moving.

Schweitzer arrived in Europe in February 1939, hoping to complete his long-awaited third volume of the *Philosophy of Civilization*. The signs of war were everywhere about him, however, and rather than risk the chance of being detained for an indefinite period, he embarked for Africa again almost immediately for what turned out to be his longest continuous African sojourn, some 10½ years.

The war years were especially strenuous since staff, medical supplies and food were all constantly in short supply. Immediately upon his return to Lambaréne before the war, Schweitzer had stretched the absolute limits of his credit by ordering ahead food, supplies and drugs, but soon everything was scarce again as the hostilities dragged on. It was largely the generous support of Americans which kept the hospital going during these dark years. In fact, immediately after the war, while Schweitzer was the sole remaining physician for a period of

time, he seriously considered closing the hospital altogether for lack of funds. Contributions from America arrived just in time to save the situation.²³

Schweitzer himself carried on with his usual grim determination, fighting what must have been physical and emotional exhaustion. Now in his 70's, he had endured the intense tropical climate year after year without a break as physician, surgeon, pharmacist, builder, maintenance man, administrator, and fund-raiser. Hardly a moment could be set aside during these years for writing, music or study, much less relaxation. At last, in October 1948, he was able to return to Europe to rejoin his wife and see his grandchildren for the first time.

3. *The Later Years (1948-1965)*

For the last seventeen years of his life, Schweitzer found himself a world celebrity, albeit a reluctant one. The demands on his time and good nature were truly extraordinary, both in Africa and in Europe, yet he bore up remarkably well with patience and humor. Honors came from every side, perhaps the most notable being the Goethe award, which brought him to America in 1949, the Nobel Peace Prize in 1953, and the Order of Merit presented by Queen Elizabeth II in 1955. Characteristically, he spent every penny he earned on his hospital, particularly the new leper colony he had been planning since the war.

The stream of visitors to Lambaréne was endless during the postwar years. Some he had invited to come, but most simply invited themselves. While many were sympathetic and supportive, a few were critical or even openly hostile, particularly about the "primitive" conditions they saw.

Modern medicine in fact, came slowly to Lambaréne, partly because of the lack of funds for expensive drugs and equipment, and partly because Schweitzer consciously made an effort to keep the hospital traditional so that the natives would identify closely with it and accept it as their own. Wherever it really counted, however, procedures were as up to date as life in the jungle permitted. New techniques and drugs in the treatment of trypanosomiasis, elephantiasis and especially leprosy were introduced almost as soon as they were available, by the young and well-trained physicians who had assisted at the hospital off and on as far back as 1925. Schweitzer himself was always eager to learn new medical techniques, despite his own medical training in another generation.

By the late 1940's there were 400 beds for Africans plus another 20 for Europeans. The

doctor's daily routine at this time was somewhat as follows: The work day began at 6:45 a.m. when he set the tasks for the native workmen. After a quick breakfast at 7:30, he personally performed or supervised the many repair and administrative tasks which constantly needed to be done around the hospital. From 10:00 a.m. to 12:45 p.m. he was engaged in medical activities in the hospital and clinic. After lunch he worked outdoors again for an hour or two and then spent time in the pharmacy preparing medications. Again from 5:00 p.m. to 6:30 p.m. he was busy with medical work, followed by an hour or so of practice on the piano before supper. After presiding at the evening meal, followed by a short devotional service, he would work at his writings, especially his voluminous longhand correspondence, until about 11:30 p.m. Finally, before retiring he returned to the hospital once more for rounds.²⁴ Many visitors in subsequent years confirm this scheme in its essential details for the last two decades of his life.

In the 1950's and 1960's, when adequate medical help was available once more, Schweitzer gave up surgery and his work in the pharmacy. His encyclopedic knowledge and experience in tropical medicine, however, made him a valuable consultant even up to his 90th year.²⁵

By the time of Schweitzer's death the hospital consisted of some 75 buildings, most of them designed and some of them actually built with his own hands. Between 1924 and 1965 a total of 125,000 new patients had been treated, including 19,872 who underwent surgery. There were special facilities for lepers, for mental patients, and those with contagious diseases. One area on the ground was set aside for the elderly and infirm to pass out their days.²⁶ The compound included storehouses, residences for the staff, guest houses, vegetable gardens, orchards, and of course, a cemetery.

Though much was modern, it was true that some of the facilities at Lambaréne were disconcertingly primitive during Schweitzer's last years. As late as 1957 there were no flush toilets—only two outhouses set on the side of the natural slope of a hill. The open pit below bred flies and vermin, not to mention unpleasant odors. Goats and chickens wandered at will throughout the hospital grounds.²⁷ No electricity was available for any purpose except the operating room lights and the x-ray machine. Until 1959, Schweitzer would not allow a motor vehicle on the hospital grounds, and once even threatened, only half in jest, to distribute nails around the roads if he were disobeyed.²⁸ Though many persons urged him to modernize now that the financial resources of the hospital

were virtually unlimited, Dr. Schweitzer stubbornly held out against changing the essential nature of the work he had built, asking that the inevitable changes come only after his death.²⁹ He was firmly convinced that the ready acceptance of the hospital by the African people was predicated on their feeling comfortable in surroundings similar to their own villages in the forests. Such an environment, he believed, did much more to hasten recovery than hospital beds, white sheets, electric lights, and diet kitchens.

The winds of change blew briskly, however, not long after his death. Officials of the newly emerged government of Gabon, while they generally recognized the great contribution Schweitzer had made to their country, were embarrassed by the run-down and apparently backward condition of the hospital. Initially under the administrative direction of Rhena Eckert, Schweitzer's daughter, running water, modern plumbing and electrification were established both in the hospital buildings and in the staff quarters. A new rehabilitation center for the care of the handicapped was begun with help of the government.³⁰ A pediatric ward and clinic and a dental clinic were established and many of the wards and other patient areas considerably brightened and remodelled.³¹ More Africans than ever before are being employed on a salaried basis, a luxury Schweitzer could never afford. Perhaps the only area of the hospital which remains just as it was is the simple two-room private quarters of the doctor himself, which have been made into a museum.³²

The hospital today is operated under the direction of an international organization which rejoices in the name "L'Association Internationale de l'Hôpital Albert Schweitzer à Lambaréne et de son Oeuvre" (AISL) with headquarters appropriately enough, in Strassburg. The group raises funds, gives general policy direction to the Administrator and Chief Physician in Lambaréne, and plans for the future. Everything, of course, is carried out in cooperation with the Government of Gabon.³³

The Schweitzer Hospital of today continues to serve the health needs of countless Africans, yet it is by no means the same institution its founder designed it to be. On the 100th anniversary of his birth, the cornerstone of a new \$6 million dollar hospital in Schweitzer's memory was laid at Lambaréne. One wonders how the old doctor would have felt about such an antiseptic palace.

III. THE PHYSICIAN AS HUMANIST

It remains to summarize, however briefly, a

few of the thoughts and attitudes which Schweitzer brought to his work as a physician and to discuss some of the more salient aspects of his character.

The fundamental question to be addressed here is, why did Albert Schweitzer, with a brilliant career in theology, philosophy and music ahead of him, decide to study medicine and go to Africa, not as a missionary in the usual sense, but primarily as a clinician?

From his earliest childhood days in Günsbach, Schweitzer was troubled by the disparity between what we would today term the "haves" and the "have nots." As a pastor's son, he was comparatively better dressed and better fed than his playmates and this inequality made him distinctly uncomfortable. He felt he had no special right to an easier life simply because of an accident of birth.³⁴ Later, when his scholastic gifts became apparent, he did not, as many might have done, drift into nameless mediocrity to avoid standing out from the crowd, but instead disciplined himself to accomplish far more than could reasonably have been expected of him. He did this with the consciousness that he could not accept his talents as a matter of course, but that on him was laid a special obligation, a feeling which led to his decision at the age of 21, as mentioned earlier.

But why medicine? His preparation as a preacher and as a musician could surely be used as effectively to give spiritual renewal to the people of a troubled world.

Words and music, however, were not real enough, not elemental enough, to afford him satisfaction. Like Goethe's Faust, he came to believe "In the beginning was the deed." In later years Schweitzer reflected that Goethe, whom he greatly admired, had portrayed his two most significant characters, Faust and Wilhelm Meister, as devoting their last years to practical service to mankind, the former as a reclaimer of flooded land for agriculture and the latter as a surgeon.³⁵

No doubt an even greater influence on his decision for service grew out of his studies on the origins of Christianity and the life of Jesus. Although his research had persuaded him that Jesus as an historical figure was conditioned in His outlook by the late Jewish messianic views of His time, there was something more lasting in the ethical teachings of the Man of Nazareth. This, he felt, was absolutely independent of historical knowledge and could only be understood by contact with His spirit which is still working in the world today. To Schweitzer, Jesus was an heroic figure.

Schweitzer did not settle on medicine right away, but rather considered the possibility of

raising orphans, or working with released prisoners or drifters. One thing was clear, however, from the outset: he wanted to find an "absolutely personal and independent activity."³⁶

He found what he was seeking in the chance reading of a pamphlet of the Paris Missionary Society. The article had asked for workers in Africa, not doctors, yet Schweitzer immediately saw his contribution as ministering to the medical needs of the Africans, partly because he knew his unorthodox theological views would not be acceptable. He explained his decision for medicine in the following way:

I wanted to become a physician in order that I could work without having to talk. For years I had been giving myself out in words . . . But this new activity I could not represent to myself as being talking about the religion of love, but only as an actual realization of it. Medical knowledge made it possible for me to carry out my intention in the best and most all-encompassing way . . .³⁸

He went on to say that the African people seemed to be terribly afflicted with disease and that through medicine he might be of the most direct and immediate help to them. Whenever he felt that the path of studying medicine might be too long (in fact, it took him eight years of preparation), he reminded himself that Hamilcar and Hannibal had prepared for their march on Rome by the slow and tedious conquest of Spain.³⁹

Elsewhere Schweitzer explained his decision for medicine in terms of the parable of the rich man and Lazarus.

We are the rich man, because we, through the advances in medicine, are in possession of much knowledge and many remedies against disease and pain. We take as a matter of course the incalculable advantages of this wealth. Out there in the colonies, however, sits poor Lazarus, the colored people, who are subjected to disease and pain just as much as we are, nay, much more, and have absolutely no means of fighting them . . . Our society as such must recognize this humanitarian work as its own. The time must come when doctors in meaningful numbers go out into the world of their own free will, sent and supported by society . . .⁴⁰

His interest in Africa, in part, harked back to missionary stories he had heard as a boy from his father, and to his contemplation of the famous statue of the black slave in the nearby town of Colmar. Perhaps more important, however, was the fact that the need in Africa seemed greater than anywhere else.

Who can describe the injustices and the cruelties that in the course of centuries they (the Africans) have suffered from the people of Europe? Who dares to measure the misery produced among them by the fiery drinks and the terrible diseases we have taken to them?⁴¹

The pain that people suffered from disease always moved him profoundly, even to his last

years, and the fact that medical science could do much to overcome the tyranny of pain made his medical work almost a sacred and elemental obligation for him. "Pain," he wrote, "is a more terrible lord of mankind than even death itself."

Whoever among us through personal experience has become knowledgeable about pain and anxiety must help to ensure that those who out there are in bodily need obtain the help which came to him. He no longer belongs to himself alone, he has become the brother of all those who suffer.⁴²

Medicine did not come easily for Schweitzer at first, or indeed ever. The anxiety and responsibility always bore heavily upon him. "I belong unfortunately among those physicians," he wrote,

who do not possess the robust temperament which is demanded in that calling, and so are consumed with constant anxiety about the condition of their severe cases... In vain I have tried to train myself to that equanimity which makes it possible for a doctor, in spite of all his sympathy with the sufferings of his patients, to husband, as is necessary, his spiritual energy.⁴³

Though he derived great satisfaction from his ability to relieve suffering and to heal, he found medical practice emotionally draining to the end of his days.

That Schweitzer studied medicine at all is a tribute to his self-discipline. He chose medicine, after calm and rational deliberation, as the work which would offer him the most personal means of serving, though neither his natural ability nor his education up to that point suited him to the tasks ahead. It was his iron will which allowed him to accomplish what must at times, have seemed beyond the strength of any human being.

The early years in Africa bore heavily on his tired frame. Besides the "culture shock" and the torrid heat of the jungle, Schweitzer was overwhelmed by the suffering and disease around him. Drugs and surgery seemed pitifully inadequate in the face of such misery. There were times, as in 1914, when his strength nearly failed him.

Two patients with a suspicious fever or headache, when I want to be scientific, can tie me for the whole morning to the microscope. Outside there are sitting twenty patients who want to be seen before noon! Surgical patients need to have their dressings changed! I must distill water, prepare medications, debride ulcers, and pull teeth! With all this harassment, and the impatience of the waiting sick, I often get so nervous that I hardly recognize myself anymore!⁴⁴

In later years he was more philosophical, though no less harassed:

In my own life, anxiety, trouble, and sorrow have been so richly allotted to me at times, that had my nerves not been so strong, I would have broken down under the weight. Heavy is the burden of fatigue and responsibility which has lain upon me

continuously for years. I have not had much of my life for myself...⁴⁵

What kept him going, however, was his assurance that what he was doing was of value. Instead of withdrawing himself from the "community of suffering" which was all around him, he consciously sought to take on his share of the burden of pain. However much concerned he was at the problems of the misery of the world, he never let himself get lost in broodings over it, but instead held firmly to the conviction that everyone can do a little to bring some portion of it to an end.

Though pessimistic about the future of mankind, Schweitzer was always able to summon up hidden reserves of faith to keep him going. In spite of all, he was able to say in 1931:

But good has also been my lot, that I may stand in the service of mercy; that my work has been successful... that I enjoy a health which allows me to accomplish the most exhausting work; that I have a well-balanced temperament;... and finally, that I can recognize as such whatever happiness falls to my lot, accepting it as a thing for which I can bring some thank-offering.⁴⁶

Schweitzer's personality had many facets. Though he could be gruff, irritable and autocratic upon occasions, he was usually the soul of gentlemanly conduct, even when his patience was sorely tried, as it often was. His stubbornness was legendary, but the opinions to which he held so tenaciously were generally based on thorough knowledge and long experience.

He rarely took himself completely seriously. His humor was often sly, and visitors were not always quite sure when they were being "put on." As a raconteur he could hold his listeners spellbound. His autobiographical writings have much of the same quality and deserve to be better known.

One of the secrets of his extraordinary productivity was organization of his time. When one task became deadening, he switched to another for a few hours. His every activity was purposeful. Schweitzer knew just what he expected to accomplish each day. Intellectual study, and, of course, his music, acted as a foil to the exhausting physical labor of the tropics. "When one reads a serious book, one ceases to be the object that has been struggling the whole day... and once more becomes a man!" he had written in 1922.⁴⁷

No discussion of Albert Schweitzer would be complete without reference to his concept of "Reverence for life," which is indeed basic to an understanding of his life as a physician. It is particularly unfortunate that many popular writers have taken this phrase as a kind of slogan, superficially portraying the man behind it as the doctor who, on the one hand, won't

swat the malaria-bearing mosquitos, or who on the other hand, is a kind of latter-day St. Francis of Assisi, or even Dr. Doolittle, out of whose hands the wild beasts eat. It is important not to oversimplify, in this way, either the man or the concept.

As early as 1899 Schweitzer had begun to turn over in his mind some of the fundamental questions of western philosophy. He was basically pessimistic over the future of mankind because the intellectual leaders of western civilization seemed unable to grasp and deal constructively with the problem of ethics in the modern world. In the holocaust of World War I, he saw his worst fears realized and immediately set to work not only to describe the downfall of civilization, as he had originally intended, but to develop a system of thought that might help to restore it.

He saw ethical perfection of the individual in an ethical society as the essential good of civilization. Searching through the philosophical legacies of the western world, however, he was unable to find a unifying principle which would become the basis for such a system.

Finally in September 1915, while he was traveling up the Ogowe River on a steamer, the answer flashed upon his mind—Reverence for Life. For the next 50 years, Schweitzer pondered, elaborated upon, and lived this principle.

Schweitzer explained this principle by the assertion, "I am life which wills to live in the midst of life which wills to live."⁴⁸ Man ardently desires further life and the life-enhancement known as pleasure, while at the same time fearing destruction and that degradation of the will-to-live known as pain.

The thinking man accepts as being good: to preserve life, to promote life, to raise to its highest value life which may be developed; and as being evil: to destroy life, to injure life, to repress life which is capable of development.⁴⁹

This principle, Schweitzer felt, extended not only to all humanity, but to all living creatures. "The ethic of Reverence for Life," he wrote elsewhere, "is the ethic of love widened into universality."⁵⁰

Such an universal ethic, however, had to be applied with judgment and reason:

To the truly ethical man all life is sacred . . . He makes distinctions only from case to case, and under the pressure of necessity, as, for example, when he must decide which of two lives he must sacrifice in order to preserve the other.⁵⁶

To make such a decision is never easy; it must always be done with full awareness of the consequences. Then, in a passage particularly relevant for physicians:

I rejoice over the new remedies for sleeping-sickness, which allow me to preserve life, whereas I previous-

ly had to watch a painful chronic malady. But every time I have under the microscope the organisms which cause the disease, I cannot but reflect that I have to destroy this life in order to save other life.⁵²

Life is to be destroyed only under a necessity that is unavoidable, never from mere amusement or thoughtlessness. Man who is truly free will use every opportunity "of tasting the blessedness of being able to assist life and avert from it suffering and destruction."⁵³

Too many of Schweitzer's critics have explained the primitive sanitary conditions at the hospital by Schweitzer's unwillingness to kill even the vermin carrying disease. This charge is totally unfair. Schweitzer never hesitated to insist on the strictest cleanliness where it counted, such as in the operating room or kitchens. Nor did he flinch from killing wild animals which threatened humans or which destroyed crops, though he preferred to fence them out if possible. The latest drugs active against parasites or bacteria were eagerly obtained and used to relieve pain and suffering.

Reverence for Life was a principle which lay at the very root of Albert Schweitzer's work as a medical man. His life, attitudes and accomplishments cannot be understood on any other basis.

IV. CONCLUSION

What, if any, is the message and meaning of Albert Schweitzer for physicians today? Why should it be that he has received recognition and honor from virtually all sides except his medical colleagues?

This is not to deny that many physicians have admired Schweitzer and have been strongly influenced by his work—Larimer Mellon in Haiti and Tom Dooley in Laos are notable examples—yet we as a profession have not exactly put these two physicians on a pedestal either.

The truth of the matter seems to be that doctors generally are reluctant to view their profession as one dedicated primarily to the relief of suffering and pain. We are unwilling to talk comfortably about "helping people" as a worthy end in itself, but only as a sort of by-product of eliminating organisms, excising tissue, or reversing pathological processes. When a man like Schweitzer goes straight to the core of the issue and says that it is a moral imperative for each of us to act as ethical beings, and that a special responsibility falls on us as physicians to use our skills to reduce the burden of suffering in the world, we turn away and talk to each other about prostoglandins, coronary bypass operations, or fee schedules.

Schweitzer is perhaps the best example in modern times of the man of thought led in-

exorably to a life of action. He grappled fearlessly with some of the fundamental human questions of this century, such as man's search for truth, his relationship to society and to other living creatures, his relationship to ethics, religion and music, but perhaps most important, his relationship to himself. He once wrote, "Here I stand and work as one who would make man a more inward and better being through thinking."⁵⁴

That his strivings in these abstract realms of thought led him to medicine should be of special interest to us as physicians. It was not a hasty decision of emotion or instinct; it was a deliberate choice based on reason and logic. Schweitzer saw in medicine the chance to serve in a simple, direct manner. He saw the relief of pain and suffering as a fundamental ethical goal. His decision to study medicine and to go to Africa, where he practised medicine for over a half-century, was the central fact of his life, to which all his many other achievements must be subordinated.

Albert Schweitzer the physician deserves better than he has received at the hands of his medical colleagues. It is easy to find fault with his early 20th-century medical training, which prepared him poorly for space-age medicine, the unsanitary state of his hospital, or even the stubbornness of his old age, but these are not the standards by which he should be judged. Rather, this giant among men should be remembered, and by physicians most of all, as one who clearly saw that man's hope in a troubled world lay in the ethic of service to all creatures.□

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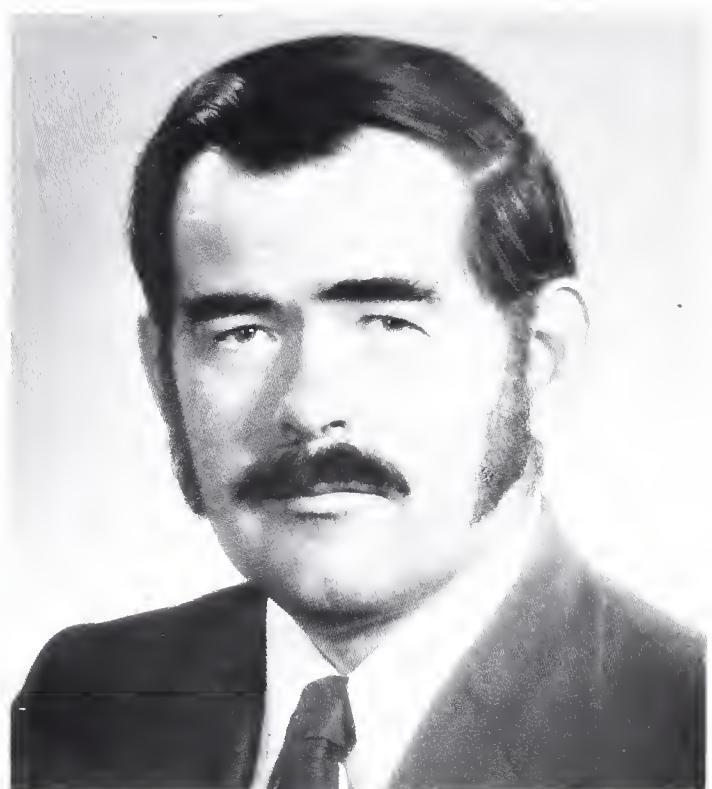
PRESIDENT'S PAGE

At the Fall Council meeting in Cordova this year a discussion was held regarding a continuing medical education requirement for membership in the Alaska State Medical Association. At the end of the discussion it was decided to develop an affirmative resolution for consideration during the House of Delegates meeting in June 1976. There were several impressions regarding such a requirement that were brought forward. They were essentially as follows:

1. It has not been shown that such a provision or indeed the actual performance of continuing education helps an individual to be a better physician.
2. A great deal of sentiment was voiced that the current schemes for evaluating and grading continuing medical education programs or schemes are inherently unfair and biased.
3. It would be very difficult for those of us practicing in remote areas with limited medical staffing to get away and attend meetings in the lower forty-eight or for that matter even in our own state frequently enough to remain certified.
4. The consumerist section of our society is going to impose such rules upon us anyway so we should not bother setting them up for ourselves.

Some of the arguments expressed considering the need for a continuing education requirement were indeed the same ones used to oppose the program, i.e.:

1. Such rules and regulations will be imposed on us at any rate, and indeed a great number of our members are already qualifying for such recertification by means of membership in the Academy of Family Physicians or through the American Medical Association recognition award.
2. Though it would be difficult for those in isolated areas to get away, certainly the requirement that such education was necessary would give such individuals the opportunity to get away from their practices long enough to become refreshed both mentally and physically in both the medical and social spheres.



Gary R. Hedges, M.D.

3. Such a requirement for membership in the Association would be a good public relations move to show that we are concerned with the continuing proficiency of our members.
4. With increasing scrutiny of trip expenses by the Internal Revenue, a review of educational opportunities with screening out of poor ones, giving a stamp of approval to good ones would help in maintaining a tax benefit for such expenses.

There may very well have been other opinions expressed, and I am certain that there are more in existence. From this vantage point I certainly recognize the truth, or at least an element of truth, in all of the above statements, but because of, or in spite of, their correctness, I believe that the overwhelming considerations must be:

1. Recognition of the need for continuing education of physicians,

2. Appreciation of the variety of need and opportunity in this direction, and
3. Acceptance of the responsibility by the Medical Association for programming.

I have just returned from a meeting and a post-graduate course that I am sure will give me a lot of Brownie points on some such schedule. Almost all of the material is available on tapes for those who were not able to attend in person. Perhaps one of the side benefits of such a program would be rating of the educational experiences of various meetings and the acquisition of certain program material by the Association and distribution to those who are unable to go "outside." Perhaps there is an even further benefit of such a program. We could function as a consumerist organization of the consumers of post-graduate medical education to bring about improvement in the quality of the programs

offered.

After hearing countless presentations followed by the meaningless phrase, "Thank you for this most interesting and informative presentation," I would appreciate the opportunity to place my vote in the hogwash column without having to boo or hiss at the speaker.

Certainly with the idea that any recommendations would be minimums, rather than a standard of excellence, and realizing that a great deal is still to be learned about what constitutes satisfactory post-graduate education, and understanding that there will still be those who will put one over on us, I believe that there is no satisfactory posture for the Alaska State Medical Association other than to assume some responsibility in monitoring the quality and quantity of post-graduate education of its members.



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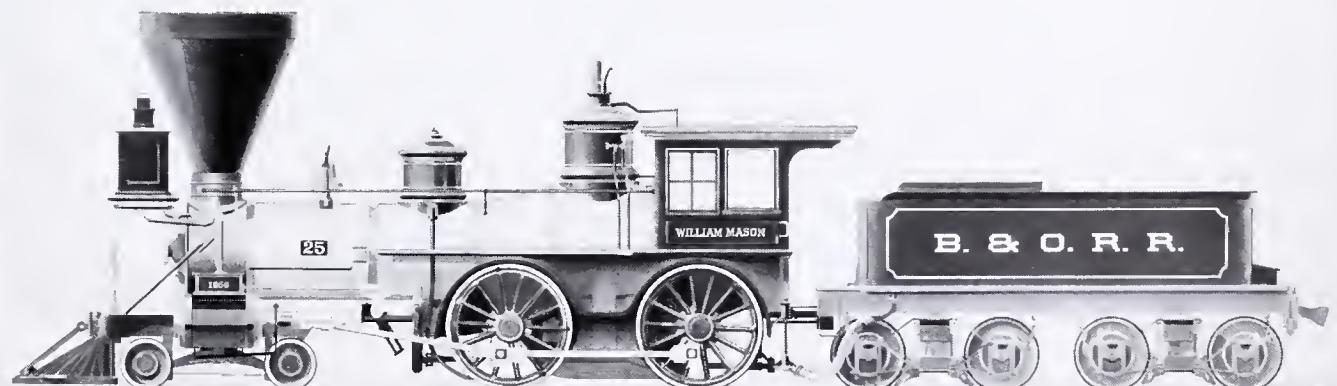
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The William Mason (1856)

Physician Illness Committee Report

Elinor B. Harvey, M.D., Chairperson
Physician Illness Committee

Physician illness is a topic little discussed until forcefully brought to the attention of the physicians and members of a community. This report is being published in the Journal of the Alaska State Medical Association with the hope and expectation that component groups of the Association or individual members or wives of members will become involved in a preventive and treatment approach.

Many state medical associations and the AMA have established committees to assess the problems, while several state medical associations, notably Florida and Oregon, have helped their state legislators pass appropriate legislation. In April 1975, the AMA held a national meeting of physician illness committees. The results of the deliberations of that meeting have been incorporated into the following report of the Physician Illness Committee submitted at the 1975 Alaska State Medical Association annual meeting at Glacier Bay.

To cover up for a sick doctor is to prolong agony and invite tragedy. Yet the experience nationally has been poor utilization of medical association physician illness committees by doctors when such use is on a voluntary basis. We probably have in this state at least the same percentage of ailing doctors as elsewhere, for example, at least 6.9% alcoholic. Reports indicate that the alcoholic physician provides poorer medical care for his patients than his sober colleague. Some malpractice suits have emanated from physician illness, particularly of an emotional nature.

On the other hand, there is also documented evidence that a large percentage of physicians who do use professional help improve markedly: in one study of 98 alcoholic physicians, 71% were in treatment more than two years and 28.8% in treatment eight years or more, with excellent results.

RECOMMENDATIONS

1. Since the WAMI program operates in this state, the curriculum for medical students should include the following:

a. Students should be taught to assist other medical students with personal problems rather than to assume that this is only a faculty disciplinary function.

b. Peer group discussions should be built into the student curriculum. In some medical schools it has been found that 50% of married students were divorced by the time they became seniors. Inability to communicate feelings, insecurity, excessive drives, marital, domestic or financial problems appear to have much to do with physician alcoholism, drug addiction and mental illness.

c. As part of the curriculum, students should be given a course in "what to do when your patient is a doctor."

d. They should be assigned a sponsor and attend Alcoholics Anonymous meetings to learn possible

alternatives for treatment of alcoholics, and receive treatment if they need it.

2. Provide a committee of the Alaska State Medical Association to receive telephone calls on a "hot line" concerning physician illness from other physicians or their wives or office nurses. When a call arrives at the State Medical Association office, a member of the committee will call back to receive the confidential information. The caller is required to report only his or her observations, not to make a diagnosis. In the experience of other states, it does take time to institute such a system; it may operate for months or even years before sufficient trust develops to utilize it fully. months or even years before sufficient trust develops to utilize it fully.

3. This same Alaska State Medical Association committee should be available to intervene if a local medical society finds it cannot cope with the ill physician. This method also helps to maintain privacy and confidentiality. But local societies should be prepared to set up their own ad hoc committees. Either committee, state or local, should consist of three to five physicians, including a psychiatrist and a "recovered physician" when possible. Confrontation by peers is useful as a therapeutic tool: if punctures the subject's fiction that his disability is non-existent or a secret.

4. Where possible a psychiatrist should serve with the PSRO Committees. It should be noted that when a psychiatrist has been a member of a peer review committee, an occasional physician with eccentric practice habits has been recognized as mentally ill and providing poor medical care for his patients.

5. The failing, senile physician provides a particularly difficult task. There is usually massive denial of a problem. Local management seems better here.

6. There should be a constructive use of probation if a license has been suspended. Supervision by a peer group, the Physician Illness Committee, is an essential part of treatment in that it helps keep the person in treatment for as long as necessary.

7. The Alaska State Medical Association should investigate legislation such as HB 795 introduced on March 18, 1974. Also the AMA model bill should be fully studied. These bills pertain to procedure when a physician becomes incompetent to practice. One question that remains to be decided by the Alaska State Medical Association is that of required reporting of physician illness by other physicians. Is there a conflict between confidentiality and the quality of medical care?

8. Several members of the Women's Auxiliary of the Alaska State Medical Association have expressed interest in the Physician Illness Committee. The Women's Auxiliary should be invited to send members to the Physician Illness Committee so that they may acquaint themselves with, and provide help for, some of the prevailing problems and possible solutions.

The trust of these recommendations is the concern for an ill colleague, as well as concern that he or she may be an incompetent physician. □

main purpose of drug information for the patient is to get his cooperation in following a drug regimen.

Preparation and distribution of patient drug information

We would hope to amass information from physicians, medical societies, the pharmaceutical industry and centers of medical learning. The ultimate responsibility for uniform labeling must, however, rest with the Food and Drug Administration. There is nothing wrong with this agency saying, "this information is generally agreed upon and therefore it should be used," as long as our process for getting the information is sound.

Distribution of the information is a problem. In great measure it would depend on the medication in question. For example, in the case of an injectable long-acting progestrone, we would think it mandatory to issue two separate leaflets—a short one for the patient to read before getting the first shot and a long one to take home in order to make a decision about continuing therapy. In this case, the information might be put directly on the package and not removable at all. But for a medication like an antihistamine this information might be issued separately, thus giving the physician the option of distribution. This could preserve the placebo use, etc.

Only the doctor can remove that fear by 20 or 30 minutes of conversation.

I'm not suggesting that we withhold any information from the patient because, first of all, it would be totally dishonest and secondly, it would defeat the very purpose of the insert. I do think that a patient on the birth control pill should know about the incidence of phlebothrombosis.

If you're going to tell a patient the incidence of serious adverse reactions, then you have to tell him that a concerned medical decision was made to use a particular medication in his situation after careful consideration of the incidence of complications or side effects.

Emotionally unstable patients pose a special problem

There are patients who, because of severe emotional problems, could not handle the information contained in a patient package insert. Yet if we are going to have a package insert at all, we just can't have two inserts. I think we might simply have to tell the families of these patients to remove the insert from the package.

Legal implications of the patient package insert

Just what effect would a pa-

It is in the distribution of patient information that the pharmacist may get involved. As professionals and members of the health-care team and as a most important source of drug information to patients, pharmacists should be responsible for keeping medical and drug records on patients. It is also logical that they should distribute drug information to them.

Realistic problems must be considered

We have to expect that the introduction of an information device will also create new problems. First, how can we communicate complex and sophisticated information to people of widely divergent socio-economic and ethnic groups? Second, what will we say? And third, how can we counteract the negative attitude of many physicians toward any outside influence or input? Hopefully the medical profession will respond by anticipating the problems and helping to solve them. Assuming we can also solve the difficulty of communicating information to diverse groups throughout the United States, our remaining task will be the inclusion of appropriate material.

What information is appropriate?

In my opinion, technical, chemical and such types of material should not be included. And there is

no point in the routine listing of side effects like nausea and vomiting which seem to apply to practically all drugs, unless it is common with the drug. However, serious side effects should be listed, as should information about a medication that is potentially risky for other reasons.

Other pertinent information might consist of drug interactions, the need for laboratory follow-up, and special storage requirements. What we want to include is information that will help increase patient compliance with the therapy.

Positive aspects of patient drug information

Labeling medication for the patient would accomplish a number of good things: the patient could be on the lookout for possible serious side effects; his compliance would increase through greater understanding; the physician would be a better source of information since he would be freer to use his time more effectively; other members of the health-care team would benefit through patient understanding and cooperation; and, finally, the physician-patient relationship would probably be enhanced by the greater understanding on the part of the patient of what the physician is doing for him.

tient package insert have on malpractice? We could try to avoid any legal implications by pointing out that the physician has selected a particular medication because, in his professional judgment, it is the treatment of choice. For instance, you can't tell everyone taking antihistamines not to work just because a few patients develop extreme drowsiness which can lead to accidents. And what about the very small incidence of aplastic anemia rarely associated with chloramphenicol? If, based on sensitivity studies and other criteria, we decide to employ this particular antibiotic, we do so in full knowledge of this serious potential side effect. It's not a simple problem.

How do we handle an insert for medication used for a placebo effect?

With rare exceptions, physicians no longer use medications for a placebo effect. This question does raise the issue of how a patient may react to receiving a medication without a package insert.

Preparation of the package insert

The development of the insert ought to be a joint operation between physicians, the pharmaceutical industry, the A.M.A. and the F.D.A.

I view the A.M.A.'s role as a coordinator or catalyst. It is the only organization through which the profession as a whole, irrespective of specialty, can speak. It has relatively instant access to all the medical expertise in this country. And it can bring that professional expertise together to ensure a better package insert. The A.M.A. can work in conjunction with the industry that has produced the product and which is ultimately going to supply the insert.

I don't think we should rely, or expect to rely, on legislative committees and their nonprofessional staffs to make these decisions when it is perfectly within the power of the two groups to resolve the issues in the very best American tradition—without the government forcing us to do it. I think the F.D.A. has to be involved, but I'd like them to become involved because they were asked to become involved.





DR. AVERY ROY ROBERTS

1892 – 1975

A page of Alaska's history was turned with the passing of "Ave" Roberts on 15 March 1975. The following are a few paragraphs of this page in his memory.

The Territory of Alaska had a new Dental Act (1913) when Dr. Roberts, a graduate of the College of the Pacific (now University of Oregon Dental School), came to Alaska in 1915, and the Boards were given in Juneau once a year, in December! Like nearly every Cheechako, he had very little money to get established and had his share of adventures and misfortunes.

He practiced at Unga and Dutch Harbor in the Aleutians, without benefit of license, then Dr. Roberts enlisted in the U. S. Army at the beginning of World War I. The Medical Corps Commissions had all been expended by the time he got there; he served as an enlisted man in the Medical Corps as "a Flunky," as he put it.

By 1924 he was back in Alaska, licensed and based at Seward but commuting via the steamship "Star" to Kodiak, Cordova, Valdez. These were the days of foot engines in dentistry and Ave wore out a few—one is still retained by his widow, incidentally.

He was in Kodiak from 1939-1943. Then moved to Anchorage and set up his office in the Old Palace Building on Fourth Avenue, later moving to an office on B Street where he remained active until 1968. While in this location he developed a unique appointment procedure. If you wanted an appointment with him you called his office on the first of the month—that was the only day he appointed patients, and on this day he programmed his work for about the next three weeks. He loved Alaska, loved photography, fishing and writing (he published in *Alaska Sportsman*), especially at his cabin on Lake Wasilla (see photo). Perhaps this influenced his office schedule.

In 1949 there were six dentists in Anchorage, 26 in the Territory. The ADA required 25 men as a minimum to establish a State Society, and Ave Roberts spearheaded the establishment of the organization. He chaired the steering committee and parceled out committee assignments on charter, bylaws, membership, etc. The military dentists at Elmendorf AFB and Ft. Richardson, particularly Cols. Rule and Bower, were most helpful in these early meetings and enrolled as members to help meet the quota requirements. The charter was granted in 1950, elections were held, and Dr. R. D. Livie was installed as the first president. Dr. Lee McKinley represented Alaska as the first delegate to the ADA Convention in 1951, at Atlantic City, N. J. Lee made the most of the situation, flying his Aeronica Sedan from Anchorage to New Jersey and back, at his expense. Roberts and McKinley made Alaskan Dentists' voice officially heard for the first time.

For no apparent reason, although perhaps the challenge had gone, perhaps "they" were closing in on him, Dr. Roberts lost interest in organized dentistry during the '60s and simply dropped out of circulation. He chose to practice his last years solo and without membership in the Alaska Dental Society he was so instrumental in founding.

Whether a current member or no, Ave Roberts deserves our homage and respect as a member of our profession and as a true Alaskan.

God grant him peace. □

NORTHERN HIGHLIGHTS — 21

SELECTED ABSTRACTS ON MEDICINE AND PUBLIC HEALTH IN THE NORTH

Botulism in Canada and Alaska:

Dolman, C. E., Human botulism in Canada (1919-1973). *Canadian Med. Assoe. J.* 110: 191-200, 1973.

This review article summarizes all reported outbreaks of botulism in Canada during a 54-year period. The author, now a professor emeritus at the University of British Columbia, was involved in the identification of many of the cases reported during this period.

Sixty-two outbreaks are briefly described, affecting 181 persons. Of the total nearly two-thirds were either in Eskimos or in Pacific Coast Indians. Only these will be described further in this abstract.

Eighteen outbreaks have been recorded among the Canadian Eskimos during this period. A total of 51 persons were involved, of whom 24 (47%) died. The Type E organisms, especially, are widely disseminated along beaches, and in the intestinal canal of marine mammals. The Eskimo methods of preparing sea mammal products for consumption are particularly favorable to the development of the toxin. It is likely that many incidents of botulism have gone unreported in remote communities, especially in years past.

Eleven episodes occurred in Labrador, affecting 22 persons, half of whom died. All were due to the consumption of seal products and those typed were all of the E variety. It is of interest in this regard that the first case of Type E botulism ever identified occurred in 1932 in Cooperstown, New York, from smoked salmon from Cartwright, Labrador. Another four outbreaks occurred in southern Baffin Island, all due to raw, stale seal meat. Seven outbreaks were recorded from northern Quebec from 1964 to 1973, due either to seal or walrus meat. Finally three episodes of botulism occurred in the Mackenzie District in the 1960's due to seal flippers or fish paste.

The practice of Pacific Coast Indians of preparing fish eggs known as "stink eggs" has led to a total of 18 recorded outbreaks of botulism. Forty-two cases were involved, with 11 deaths. Geographically, the episodes have been identified in the Bella Bella region (8), near Prince Rupert (6), the Queen Charlotte Islands (2), and the west coast of Vancouver Island (2). One outbreak involved Type B; all others Type E.

Among 42 carefully studied cases of clinical botulism, the commonest abnormalities were: nausea and vomiting (38); generalized weakness (30); abdominal pain (25); blurred vision or diplopia (25); and dryness of the mouth and throat (20). Diarrhea occurred more often than constipation, perhaps due to other bacterial contaminants.

The author stresses the importance of laboratory diagnosis but feels that antitoxin should be given anyway if strong clinical or epidemiological evidence suggests botulism. Treatment for severe cases is a full vial of trivalent antitoxin IV, repeated if necessary after a few hours. Another vial IM may be given as well.

Prevention is by thorough cooking of food and avoidance of dangerous food preservation techniques.

Audet, D.; Landry, Y.; Gauvreau, L.; Petrow, S.; Kasatiya, S. S.; Johnston, M. A.

Botulism de Type E. Deux épidémies à Fort-Chimo, *L'Union Méd. Can.* 103: 1726-37, 1973.

This paper reports two epidemics of Type E botulism which occurred in 1971 in Fort Chimo, Quebec, an Eskimo community on Ungava Bay. The principal author is with the Department of Medicine, Emergency Service, at the Medical Center Hospital of Laval University, Quebec.

The reported outbreaks were the first bacteriologically confirmed cases of Type E botulism in the Province. The first episode, in July, affected 14 persons, of whom three died; the second occurred in September and involved two individuals. Representative cases from each epidemic are discussed in detail.

In the first epidemic the affected individuals ingested beluga meat from an animal which had been caught approximately two weeks before. Of the 14 clinical cases, nine were evacuated to Quebec City for intensive care, where two subsequently died. Of the five remaining at Fort Chimo, one died prior to transfer and the others were minimally affected. The most conspicuous clinical features were vomiting, nausea, abdominal pain, muscular weakness and dry mouth. No antitoxin was available at Fort Chimo.

The second outbreak involved two persons who had eaten raw seal meat kept in seal oil. Both patients received antitoxin before transfer to Quebec and both recovered.

No toxin could be recovered from the dried beluga meat, but *Cl. botulinum* type E was cultured from it. Both toxin and organisms were recovered from the seal meat.

The remainder of the paper is a discussion of Type E botulism with particular reference to its epidemiology, mortality, pathogenesis, diagnosis, treatment and prevention. Stressed are the importance of prompt recognition and treatment of the disease. Particular attention needs to be given to the use of adequate quantities of antitoxin (30-40,000 units IV), and ventilatory assistance.

The authors suggest that Eskimos, Western Indians, and the Japanese should receive trivalent botulinum toxoid for active immunization.

Type B botulism — Alaska. *Morbid. & Mortal. Weekly Rep.* 23 (1): 2, Jan. 5, 1974.

Nine cases of Type B botulism occurred at Cheforak, 70 miles west of Bethel, between November 25 and 28, 1973. The first case was identified at the Bethel Hospital in a woman in her eighth month of pregnancy who developed mydriasis, ptosis, stridor, dysphagia, and dry mucous membranes. She was treated with trivalent (ABE) botulinum antitoxin and recovered.

Two other patients became ill and were treated at Bethel. An epidemiologic investigation by the staff of

the Center for Disease Control revealed six other affected individuals. All recovered without incident.

Serum and stool specimens from hospitalized patients were positive for Type B botulinum toxin by mouse inoculation tests.

Dried whitefish from a single cache appeared to be the cause of the outbreak, which is the first reported from Alaska due to Type B.

Botulism — Scammon Bay, Alaska. *Alaska DHSS Communicable Disease Bull.* For period ending Dec. 23, 1974.

This report describes the case of a six-year-old girl from Scammon Bay who developed vomiting, dry throat, and obtundation, followed by ptosis, dysphagia, constipation, and urinary retention over a three-day period in late November 1974. She was treated at the Bethel Hospital with trivalent antitoxin and completely recovered. Type E toxin was identified in her pretreatment serum. The offending food was identified as dried smoked salmon dipped in seal oil and stored in an airtight seal skin.

Botulism outbreak — New Stuyahok. *Alaska DHSS. Communicable Disease Bulletin.* For period ending March 17, 1975.

A 57-year-old woman was brought from New Stuyahok to the Kanakanak Native Hospital as an emergency on March 3, 1975, with right arm weakness, dysphagia, and blindness in one eye, followed later by a respiratory arrest. Although initially resuscitated she later died of respiratory arrest. The next day another patient from the same village was admitted with a history of vomiting, epigastric pain, and dysphagia. She also developed respiratory arrest and died. A short time later a third patient, this time from Manokotak, was admitted with a history of vomiting, epigastric pain, headache, cough, followed by dysphagia, double vision, photophobia, and facial numbness. Respiratory depression was noted. Trivalent botulinum antitoxin was administered and the patient was transferred to ANMC in Anchorage, where she underwent a tracheostomy. This third patient ultimately recovered.

Investigation showed that all three patients had eaten portions of a single uncooked fermented beaver tail, which had been kept under anaerobic conditions in a plastic bag. Type A botulinum toxin was identified in the serum of all three cases and in the leftover beaver tail. This was the first case of Type A botulism reported from Alaska.

Dental Disorders:

Kristoffersen, T., Bang, G.

Periodontal disease and oral hygiene in an Alaskan Eskimo population. *J. Dent. Res.* 52: 791-796, 1973.

This paper describes the periodontal disease observed in the Eskimo population of Anaktuvuk Pass in 1965 as part of a longitudinal study of the influence of cultural change on dental disease in this group. The authors are with the School of Dentistry at the Gade Institute, University of Bergen, Norway.

Of a total population of 90 individuals, 75 were examined in 1965, most of the remainder being infants. Of the group, 54 had been examined in the previous

studies of 1955-57. Periodontal disease was assessed by means of Russell's Periodontal Index and oral hygiene by the Simplified Oral Hygiene Index of Greene and Vermilion.

All 75 persons had clinically overt periodontal disease, with scores ranging from 0.13 to 5.36. Gingivitis was present in all children, with half of them showing generalized or severe disease. There was a gradual increase in severity of periodontal disease with age in both sexes. Oral hygiene habits were primitive, as expected. None of the population brushed their teeth regularly and 47 individuals did not brush them at all. In the 20-39-year-old group, the severity of periodontal disease correlated with variations in oral hygiene rather than with age.

Though no exact comparisons could be made with the surveys of 1955-57, the investigators found much less evidence of periodontal disease in the earlier study.

A considerable dietary shift occurred in the period between the two surveys. Both the nutrient content of the foods and its physical character altered substantially. Reluctance on the part of the older people to change their dietary habits may in part explain the apparent lack of progression of periodontal disease with age.

Myers, G. S.; Lee, M.

Comparison of oral health in four Canadian Indian communities. *J. Dent. Res.* 53: 385-392, 1974.

This study reports the findings of an oral health survey conducted in conjunction with a nutritional survey among four Indian communities of British Columbia and the Yukon Territory. The authors are with the Department of Dental Hygiene, Sheridan College, Sheridan, Wyoming and the Division of Human Nutrition, University of British Columbia, Vancouver.

The surveys were carried out in Ahousat, a Nootka coastal village, and Anaham, a Chilcotin village in the interior, both in British Columbia, and at two Athapaskan villages in the Yukon Territory, Upper Liard and Ross River.

Considerable differences in oral health were observed among the people of the four communities. Rapidly deteriorating dental conditions were especially apparent in the 12-20 age group at Ahousat. Marked tooth loss was also seen in this community in the 20-40 age group. In the other communities, males exhibited similar dental health, which was comparable to that reported for some American Indian populations, but among females the conditions at Anaham were worse than those at the two Athapaskan communities. In those over 40, the people of Ahousat had lost over half their teeth, as had the females at Anaham. At Ross River and Upper Liard, however, the incidence of caries and tooth loss was relatively small.

Oral hygiene was less satisfactory at Ahousat and Anaham than at the other two communities, especially in the older groups. Periodontal disease was also more marked in the British Columbia communities.

Correlations with dietary intake histories showed that the consumption of candy, carbonated beverages, and dessert powders was eight times as great at Ahousat than at Anaham.

The authors point out that many factors, such as genetic constitution, dietary patterns, and the availability of medical and dental care, may influence the conditions of oral health observed. Isolation, cultural practices, and level of personal income may also play an important part.

—Robert Fortune, M.D.

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